CONTRACT

SPECIAL PROVISIONS

CSI-Inch/Pound

A + B Bidding

Project No: **SP-0193(3)1**

Name: **SR-193; FROM I-15 TO SR-89**

Open Graded Surface Course

County: **DAVIS**

Bid Opening: **April 20, 2004**

Date

GOING THE EXTRA MILE

2002 - U.S. Standard Units (Inch-Pound Units) February 2, 2004

Table of Contents

Project # SP-0193(3)1

State-Orange Book With 8 ½" x 11" Plan Sheets

XIII. Special Provisions

1.	Section 00555 M	Prosecution and Progress
2.	Section 00570 M	Definitions
3.	Section 00725 M	Scope of Work
4.	Section 01452 M	Profilograph and Pavement Smoothness
5.	Section 01557 S	Maintenance of Traffic (MOT)
6.	Section 01892 M	Reconstruction Catch Basin, Cleanout, Meter, Valve, Manhole and Monument Boxes
7.	Section 02742 S	Project Specific Surfacing Requirements
8.	Section 02745 S	Asphalt Material
9.	Section 02768 M	Pavement Marking Materials
10.	Section 02721 M	Untreated Base Course (shoulder dressing)
11.	Section 02771 M	Curbs, Gutters, Driveways, Pedestrian Access Ramps, and Plowable End Sections
12.	Section 02772 S	Surface Courses – Pothole Patching
13.	Section 02892 M	Traffic Signal

I. 2002 Standard Specifications

The State of Utah Standard Specifications for Road and Bridge Construction, U.S. Standard Units (Inch Pound Units) CSI Format, Edition of 2002 with Changes One and Two included applies on this project as a static Specification Book as well as all other applicable specification changes.

Refer to Part II (List of Revised Standard Specifications) and Part XIII (Special Provisions) for other project specific specifications.

II. List of Revised Standard Specifications

Change One – Included in 2002 Standard Specifications

Revised August 29, 2002

Section 00570 Articles 1.2 A 69, A 71 b (deleted)
Section 00727 Articles 1.1 D; 1.5 B; 1.9; 1.10; 1.16 B, C; 1.18 B
Section 01574 Articles 1.2 B
Section 02721 Articles 1.2 D (added), H (replaced), I (deleted);1.6 B1; 2.1 A Table 3; 3.2 C
Section 02741 Articles 3.8 E 2 a, b
Section 02821 Articles 3.1 A
Section 02892 Articles 1.5 A, B
Section 02936 Articles 1.4; 1.5 C
Section 03152 Articles 1.2 P, Q; 2.2 A, B
Section 05120 Articles 1.4 A (deleted), 3.3 A
Section 16525 Articles 1.6 A, B

Change Two – Included in 2002 Standard Specifications

Revised December 19, 2002

Section 01561 Article 3.1 A
Section 02075 Article 2.7 A
Section 02372 Article 2.1 A 4
Section 02455 Article 3.3 B 2
Section 02785 Article 3.2 C
Section 02861 Article 3.3 A
Section 03055 Articles 1.2 P (inserted), 2.3 B, 2.4 (deleted), 2.7 A 1 a-e (added), 2.7 B 2 (added), 2.8 A 1 a, 2.8 A 2 (deleted), 2.9 A3, 3.2 A Table, 3.2 C, 3.7 A 3, 3.8 C 1, 3.9 A-B, 3.10, 3.11 B 1, 3.11 B 3
Section 07922 Article 2.1 Table 1

Change Three

Revised February 27, 2003

Section 01355 Article 1.3 A 3
Section 01721 1.4 C deleted and moved to Measurement and Payment document
Section 02222 Changed title from Site Demolition-Pavement to Site Demolition - Concrete, A, 3.2 Title, 3.2 A
Section 02224 New Specification
Section 02316 1.2 A, D, I added, 1.3 added, 1.7 B, C, D, E, F, G added, 3.9 A added
Section 02455 3.3 B 2 (corrected error from change two)
Section 02721 1.2 Related Sections added, 1.3 H and I added, 1.7 B, 1.7 F deleted, 2.1 B added, 2.2 deleted, 3.1 Title changed, 3.2 B reference added, 3.2 E added
Section 02741 1.4 C6a added, 1.4 H, Table 3, 2.4 A, 2.4 C, Table 9, 2.5 B 1-3, 2.5 B 4 added, 2.5 D, 3.1 Al deleted, 3.2 C3 added, 3.7 D1, 3.9 B4, 3.9 B5 added, 3.9 E note added
Section 02744 Entire Section deleted
Section 02745 1.4 A9
Section 02785 1.2 C and D added
Section 02892 Added Articles, 1.3 N, O, Y, 1.5 D, 2.4 I, 2.5 C, D, E, 2.6 B3 - B6, 2.6 C, 2.16, 2.17, 3.11 and Revised Articles 3.5 F and Table Number, 3.5 G and Table Number
Section 02896 2.1 A, B and 3.1 A drawing number corrected
Section 16525 1.2 H

Change Four

Revised April 24, 2003

Section 00555 1.18 added Table 1
Section 01280 1.2 K
Section 01282 1.13 B added, 1.13 G 2 deleted
Section 02222 1.2 B Title Changed
Section 02231 3.5 A
Section 02705 Title Changed, 1.1 A, 1.3 added, 3.1 Title changed, 3.1 A, 3.1 D moved, 3.2 added
Section 02741 3.7 B
Section 02747 Entire Section deleted
Section 02752 1.8 E 1
Section 02753 3.1 D 5 a, 3.3 D
Section 02842 2.4A
Section 02861 2.1 I
Section 02911 3.2 A 1
Section 02931 3.2 B
Section 03392 2.1 A 8-9
Section 03921 2.1 A 1, 2.1 C
Section 03922 2.1 B 1-2
Section 03923 2.1 A-B, 3.1 B
Section 03924 2.2 A-B

Section 03935 2.1 A, 2.1 A 2
Section 07105 2.3 A
Section 13553 1.2 C Title Changed
Section 13554 1.1 A, 1.3 C and D added, 2.1 A, 2.1 F, 2.2 D 1, 2.2 D 2 deleted, 2.2 E, 2.2 H, 2.2 H 2, 2.2 H 3 deleted and renumbered, 3.1 B 3 added, 3.1 I

Change Five

Revised June 26, 2003

Section 00727 1.5 B – Measurement and Payment added
Section 01452 Parts 1 and 3 replaced
Section 01721 3.3 A, 3.15 added
Section 02741 1.2 A
Section 02752 1.2 B, 1.9 added, 3.13 deleted
Section 02786 1.2 B, 1.4 D 1
Section 02962 Entire Section Replaced

Change Six

Revised August 28, 2003

Section 01455 1.6 H
Section 01571 1.1 B, 1.2 B and F added, 3.1 B revised, 3.1 D deleted and E renumbered to D, 3.2 A 1 and 2 deleted, 3.2 B added, 3.3 added, 3.4 added, 3.5 added
Section 01574 1.5 A, 3.3 A
Section 02316 1.1 D added, 1.7 B, C, C.3, and D
Section 02896 3.1 A 5 added, 3.3 C 3 and 4
Section 03211 3.3 F 1
Section 09972 1.5, 2.1 A, 3.1 A, 3.2 A 1 b and d, 3.2 B 3 and 5, 3.4 E, G, H
Section 09991 1.1 A, 1.3 added, 1.4, 1.6 B 2 c added, 2.2 A, 3.1 I
Section 09992 1.4 A, 1.5, 1.7 B 2 c, 2.2 A

Change Seven

Revised October 30, 2003

Section 00120 1.1 all, 1.2 A, B, 1.3 A, 1.4 all, 1.5 A, 1.6 A, 1.7 B, C, D, H, 1.8 A, B, D, E deleted and remaining re-lettered, E, H, 1.9 A, 1.10 all, 1.11 all, 1.12 all, 1.14 A, 1.16 F, 1.20 E
Section 00515 1.2 A, C 1, C 4, 1.3 D, 1.5 A, 1.6 A, B, E deleted and remaining re-lettered, G 2, 1.7 A, A 1
Section 01452 1.4 B 1
Section 02075 2.4 A, 2.5 A
Section 02330 3.3 K
Section 09992 2.2 B
Section 13592 Revised entirely

State-Orange Book With 8 ½” x 11” Plan Sheets

Change Eight

Revised December 18, 2003

Section 01721 1.1 A, 1.2, 1.4, 1.5 E, 1.6 A, 3.4 B, 3.5 C and D, 3.6, 3.14 added, 3.15
Section 16525 1.2 A deleted, 1.6 A, 2.6 A, 2.6 F 1, 2.7 A, 2.7 B, 2.14 C, 2.16 A, 2.16 B, 2.17 B 2, 3.2 A, 3.9 A, 3.11 A

III. Listing of Revised Standard Drawings

Change One

Revised December 19, 2002

AT 7	Polymer Concrete Junction Box Details	12/19/2002
BA 1A	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 1B	Precast Concrete Full Barrier Standard Section	12/19/2002
BA 3	Cast In Place Constant Slope Barrier	12/19/2002
BA 4B	Beam Guardrail Installations	12/19/2002
BA 4C	Beam Guardrail Anchor Type I	12/19/2002
CC 6	Crash Cushion Type E Sand Barrel Details	12/19/2002
DG 3	Maximum Fill Height and End Sections for HDPE And PVC Pipes	12/19/2002
DG 4	Pipe Culverts Minimum Cover	12/19/2002
EN 4	Temporary Erosion Control (Drop-Inlet Barriers)	12/19/2002
GW 1	Raised Median and Plowable End Section	12/19/2002
PV 2	Pavement Approach Slab Details	12/19/2002
SL 13	Traffic Counting Loop Detector Details	12/19/2002
SN 2	Flashing School Sign	12/19/2002
SN 4	Flashing Stop Sign	12/19/2002
SN 5	Typical Installation For Milepost Signs	12/19/2002
SN 8	Ground Mounted Timber Sign Post (P1)	12/19/2002
ST 1	Object Marker "T" Intersection and Pavement Transition Guidance	12/19/2002
ST 7	Pavement Markings and Signs at Railroad Crossings	12/19/2002
SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/2002
SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/2002
SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/2002

Change Two

Revised February 27, 2003

GW 2	Concrete Curb and Gutter	02/27/2003
GW 5	Pedestrian Access	02/27/2003

Change Three

Revised April 24, 2003

AT 7	Polymer-Concrete Junction Box Details	04/24/2003
CB 2	Curb Inlet Catch Basin	04/24/2003
CC 7	Grading & Installation Details Crash Cushion Type F	04/24/2003
CC 8	Grading & Installation Details Crash Cushion Type G	04/24/2003
CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/2003 (New)
EN 2	Temporary Erosion Control (Silt Fence)	04/24/2003
GW 2	Concrete Curb and Gutter	04/24/2003
SN 12B	Ground Mounted Sign Installation Details	04/24/2003

Change Four

Revised June 26, 2003

DD 1	Superelevation and Widening	06/26/2003
DD 3	Climbing Lanes	06/26/2003
DD 8	Structural Geometric Design Standards Clearances	06/26/2003
DD 9	Structural Geometric Design Standards	06/26/2003
DD 10	Railroad Clearances At Highway Overpass Structures	06/26/2003
DD 11	Rural Multi Lane Highways Other Than Freeways	06/26/2003
DD 12	Rural Two Lane Highways	06/26/2003
DD 13	Frontage and Access Roads (Under 50 ADT)	06/26/2003
GW 2	Concrete Curb & Gutter	06/26/2003

Change Five

Revised August 28, 2003

DD 2	Slope Rounding, Benched Slope, and Cut Ditch Details	08/28/03 (New)
DD 4	Geometric Design for Freeways (Roadway)	08/28/03 (New)
DD 5	Entrance and Exit Ramps At Crossroads	08/28/03 (New)
DD 6	Entrance and Exit Ramp Geometrics	08/28/03 (New)
DD 7	Freeway Crossover	08/28/03 (New)
DD 14	Typical Rural 2 Lane Road With Median Lane and Deceleration Lane For Intersecting Crossroads	08/28/03 (New)
GW 9	Delineation Hardware	08/28/03
GW 10	Delineation Application	08/28/03
GW 11	Sidewalks and Shoulders On Urban Roadways	08/28/03 (New)
ST 2	Freeway Crossover Markings	08/28/03
ST 9	School Crossing and School Message	08/28/03 (New)

Change Six

Revised October 30, 2003

AT 15	RWIS Site and Foundation Details	10/30/03 (New)
AT 16	RPU Tower Base and Service Pad Layout	10/30/03 (New)
AT 17	Ground Rod Installation and Tower Grounding	10/30/03 (New)
SN 2	School Speed Limit Assembly	10/30/03
SN 3	Overhead School Speed Limit Assembly	10/30/03

Change Seven

Revised December 18, 2003

DD 2	Surface Ditch, Benched Slope, and Cut Ditch Details	12/18/03
DD 4	Geometric Design For Freeways (Roadway)	12/18/03
DD 11	Rural Multi Lane Highways Other Than Freeways	12/18/03
DD 12	Rural Two Lane Highways	12/18/03
DD 13	Frontage and Access Roads (Under 50 ADT)	12/18/03
SL 1A	Traffic Signal Mast Arm Pole and Luminaire Extension	12/18/03
SL 1B	Traffic Signal Mast Arm Pole and Luminaire Extension	12/18/03
SL 2	Traffic Signal Mast Arm Detail 30' Thru 75'	12/18/03
SL 3	Underground Service Pedestal Detail	12/18/03
SL 4	Traffic Signal Mast Arm Pole Foundation	12/18/03
SL 5	Traffic Signal Pole	12/18/03
SL 6	Pole Mounted Power Source Details	12/18/03
SL 7	Span Wire Signal Pole Detail	12/18/03
SL 8	Signal Head Details	12/18/03
SL 9	Pedestrian Signal Assembly	12/18/03
SL 10	Traffic Signal Controller Base Detail	12/18/03
SL 11	Traffic Signal Loop Detector Detail	12/18/03
SL 12	Traffic Counting Loop Detector Detail	12/18/03
SL 13	Drawing Deleted - Will be added in future	
SL 14	Highway Luminaire Pole Ground Mount	12/18/03
SL 15	Luminaire Slip Base Detail	12/18/03
SL 16	Highway Luminaire Pole Barrier Mount	12/18/03
SL 17	Highway Luminaire Pole Foundation Extension	12/18/03
SL 18	Single Transformer Substation Details	12/18/03

IV. Materials Minimum Sampling and Testing

Follow the requirements of the Current Materials Minimum Sampling and Testing Manual:

Materials Minimum Sampling and Testing Manual reference can be found from the UDOT Web Site at:
http://www.udot.utah.gov/index.php/m=c/tid=642

NOTICE TO CONTRACTORS

A + B Bidding

Sealed proposals will be received by the Utah Department of Transportation UDOT/DPS Building (4th Floor), 4501 South 2700 West, Salt Lake City, Utah. 84114-8220, until 2 o'clock p.m. Tuesday, April 20, 2004, and at that time the download process of bids from the USERTrust Vault to UDOT will begin, with the public opening of bids scheduled at 2:30 for Open Graded Surface Course of SR-193; FROM I-15 TO SR-89 in DAVIS County, the same being identified as State Maintenance Project No: SP-0193(3)1.

Federal Regulations:
Wage Rate Non-Applicable.

Project Location: 5 Miles of Route: 0193 from R.P. 0.7 to R.P. 5.7

The principal items of work are as follows (for all items of work see attachment):
Open Graded Surface Course
Asphalt Cement PG 64-34
4 inch Pavement Marking Tape - Yellow

The project is to be completed: in 45 Calendar Days.

Other Requirements:
All project bidding information, including Specifications and Plans, can be viewed, downloaded, and printed from UDOT's Project Development Construction Bid Opening Information website, http://www.udot.utah.gov/index.php/m=c/tid=319. To bid on UDOT projects, bidders must use UDOT's Electronic Bid System (EBS). The EBS software and EBS training schedules are also available on this website.

Project information can also be reviewed at the main office in Salt Lake City, its Region offices, and its District offices in Price, Richfield, and Cedar City.

Project Plans cannot be downloaded or printed from the website unless your company is registered with UDOT. Go to UDOT's website to register. Unregistered companies may obtain a **CD**, that contains the Specifications and Plans, from the main office, 4501 South 2700 West, Salt Lake City, (801) 965-4346, for a fee of $20.00, plus tax and mail charge, if applicable, none of which will be refunded.

Prequalification of bidders is required. Prior to submitting a bid, the bidder must have on file with the Utah Department of Transportation a completed and approved contractor's application for prequalification. Department processing time is 10 working days from receipt of properly executed documentation.

As required, a contractor's license must be obtained from the Utah Department of Commerce.

Each bidder must submit an electronic bid bond from an approved surety company using UDOT's Electronic Bid System (EBS); or in lieu thereof, cash, certified check, or cashier's check for not less than 5% of the total amount of the bid, made payable to the Utah Department of Transportation, showing evidence of good faith and a guarantee that if awarded the contract, the bidder will execute the contract and furnish the contract bonds as required.

The right to reject any or all bids is reserved.

If you need an accommodation under the Americans with Disabilities Act, contact the Construction Division at (801) 965-4346. Please allow three working days.

Additional information may be secured at the office of the Utah Department of Transportation, (801) 965-4346.

Dated this 03rd day of April, 2004.

UTAH DEPARTMENT OF TRANSPORTATION
John R. Njord, Director

Revised Date:

VI. EQUAL OPPORTUNITY (STATE PROJECTS)

Selection of Subcontractors, Service Providers, Procurement of Materials and Leasing of Equipment:

Do not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

Notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. Use best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Obtain lists of DBE construction firms from SHA personnel.

Use best efforts to ensure subcontractor compliance with their EEO obligations.

Selection of Labor:

During the performance of this contract, do not discriminate against labor from any other State, possession, or territory of the United States.

Employment Practices:

During the performance of this contract, the Contractor agrees as follows:

Do not discriminate against any employee or applicant for employment because of race, religion, sex, color, national origin, age, or disability. Take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age, or disability. Such action includes, but is not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Department of Transportation setting forth the provisions of this nondiscrimination clause.

In all solicitations or advertisements for employees state that all qualified applicants receive consideration for employment without regard to race, religion, sex, color, national origin, age, or disability.

Send to each labor union or representative of workers that the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Department of Transportation advising the said labor union or worker' representative of the commitments under this section and post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further State contracts.

Include the provisions of this Section in every subcontract or purchase order so that such provision will be binding upon each Subcontractor or vendor. Take such action with respect to any subcontract or purchase order as the State Department of Transportation may direct as a means of enforcing such provisions including sanctions for noncompliance.

Utah Department of Transportation
Bidder's Schedule

Bid Opening Date: 4/20/2004
Region: REGION 1
Project Number: SP-0193(3)1
County: DAVIS
Project Name: SR-193; FROM I-15 TO SR-89
Concept: Open Graded Surface Course
Funding: MAINTENANCE
A + B Bidding
Bid Items Version#: 1
DBE Goal:

#	Item	Description	Quantity	Unit
10 - ROADWAY				
	Description: OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7			
1	012850010	Mobilization	1	lump sum
2	013150010	Public Information Services	1	lump sum
3	015540005	Traffic Control	1	lump sum
4	01557000*	Maintenance of Traffic (MOT)	1	lump sum
5	01892001*	Reconstruct Catch Basin or Cleanout Box	35	each
6	01892004*	Reconstruct Valve Box	60	each
7	01892005*	Reconstruct Manhole	45	each
8	01892006*	Prelower Catch Basin or Cleanout Box (Contingent Item)	1	each
9	01892007*	Prelower Valve Box	2	each
10	01892008*	Prelower Manhole	2	each
11	02721007*	Untreated Base Course (shoulder dressing) 3/4 or 1 inch Max	100	ton
12	027410060	HMA - 3/4 inch	900	ton
13	027480050	Emulsified Asphalt SS-1H	250	ton
14	02768000*	4 inch Pavement Marking Tape - White	25250	foot
15	02768001*	8 inch Pavement Marking Tape - White	5000	foot
16	02768003*	4 inch Pavement Marking Tape - Yellow	61000	foot
17	02768020*	Pavement Message (Preformed Thermoplastic)	210	each
18	02771000*	Detectable Warning Panel	24	each
19	02771002P	Concrete Curb and Gutter Type B1	80	foot
20	02771006*	Pedestrian Access Ramp Type B	2	each
21	02771008*	Pedestrian Access Ramp Type E	25	each
22	02772000*	Surface Coarse - Pothole Patching (Contingent item)	800	square foot
23	027760010	Concrete Sidewalk	100	square foot
24	027760030	Concrete Flatwork 4 inch thick	50	square foot
25	027860010	Open Graded Surface Course	14707	ton
26	027860020	Asphalt Cement PG 64-34	1000	ton
27	02892000*	Install State Furnished Video Detection Cable Circuit	6	each
28	02961001*	Rotomilling	5500	square yard

Note: Item numbers ending with "" or "P" identify a change to the Standard Specification, Supplemental Specifications or Measurement and payment. Read all related documents carefully.

State-Orange Book With 8 ½” x 11” Plan Sheets

March 9, 2004

CSI Measurement and Payment Instructions
Project # SP-0193(3)1

Section 01285: Mobilization

1	**012850010**	**Mobilization**	**Lump sum**
	Payment	**Amount Paid**	**When Paid**
	First	The lesser of 25% of Mobilization or 2.5% of contract	With first estimate
	Second	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 5% of contract
	Third	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 10% of contract
	Fourth	The lesser of 25% of Mobilization or 2.5% of contract	With estimate following completion of 20% of contract
	Final	Amount bid in excess of 10% of contract price.	Project Acceptance-Final

Section 01315: Public Information Services

2	**013150010**	**Public Information Services**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

Section 01554: Traffic Control

3	**015540005**	**Traffic Control**	**Lump Sum**
	Payment	**Amount Paid**	**When Paid**
	One	25% of the bid item amount	With first estimate
		Remaining portion of bid item paid as a percentage of the contract completed	With each estimate

Section 01557: Maintenance of Traffic (MOT)

4	**01557000***	**Maintenance of Traffic (MOT)**	**Lump Sum**

Section 01892: Reconstruct Catch Basin, Cleanout, Meter, Valve, Manhole, and Monument Boxes

5	**01892001***	**Reconstruct Catch Basin or Cleanout Box**	**Each**
In place Includes removal and disposal of existing metal grate and portion of old catch basin. Item also includes all labor and material required for the construction of standard catch basin with new bicycle safe grate. A. Some catch basins/cleanout boxes are larger than normal and have large concrete aprons, this item includes the extra labor and material required to reconstruct these larger catch basins/cleanout boxes. B. Over night plating is required for catch basins/cleanout boxes in traveled lanes.			

6	**01892004***	**Reconstruct Valve Box**	**Each**
In place A. Over night plating is required for valves in traveled lanes.			

7	**01892005***	**Reconstruct Manhole**	**Each**
In place A. Over night plating is required for manholes in traveled lanes.			

8	**01892006***	**Prelower Catch Basin or Cleanout Box (Contingent Item)**	**Each**
In place A. Lower catch basins/cleanout boxes before rotomilling.			

9	**01892007***	**Prelower Valve Box**	**Each**
In place A. Lower valves before rotomilling.			

10	**01892008***	**Prelower Manhole**	**Each**
In place A. Lower manholes before rotomilling.			

Section 02721: Untreated Base Course (UTBC)

11	**02721007***	**Untreated Base Course (shoulder dressing) 3/4 or 1 inch Max**	**Ton**
In place A. Includes leveling, grading and compaction of material.			

Section 02741: Hot Mix Asphalt (HMA)

12	**027410060**	**HMA - 3/4 inch**	**Ton**
Includes aggregates, asphalt binder, hydrated lime, other additives, etc. The Department will not pay separately for asphalt binder, hydrated lime, additives, etc.			

Section 02748: Prime Coat/Tack Coat

13	**027480050**	**Emulsified Asphalt SS-1H**	**Ton**
Measure concentrate diluted 1 to 1. Paid from asphalt vendors certified weigh ticket.			

Section 02768: Pavement Marking Materials (Warranty Specification)

14	**02768000***	**4 inch Pavement Marking Tape - White**	**Feet**
A. Do not measure the gap in the skip line. B. Include all costs for the Manufacturer's Service Representative and other technical assistance in the contract unit price. C. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.			

15	**02768001***	**8 inch Pavement Marking Tape - White**	**Feet**
A. Do not measure the gap in the skip line. B. Include all costs for the Manufacturer's Service Representative and other technical assistance in the contract unit price. C. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.			

16	**02768003***	**4 inch Pavement Marking Tape - Yellow**	**Feet**
A. Do not measure the gap in the skip line. B. Include all costs for the Manufacturer's Service Representative and other technical assistance in the contract unit price. C. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.			

17	**02768020***	**Pavement Message (Preformed Thermoplastic)**	**Each**
Measurement - Painted Pavement Messages: A. Letter = one message. B. Arrow = one message. C. Multi-headed arrow = one message per arrow. D. School crossbars = one message per 24 inch x 10 ft bar. E. Crosswalk = two message per lane and two messages per shoulder. F. Stop Bar = one message per lane and one message per shoulder. G. Railroad crossing markings = seven messages per lane. 1. 'R' = one message each (two required). 2. 'X' = two messages. 3. Transverse Bar = one message each (two required). 4. Stop Bar = one message. H. Include all costs for the Manufacturer's Service Representative and other technical assistance in the contract unit price. I. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.			

Section 02771: Curbs, Gutters, Driveways, Disabled Pedestrian Ramps, and Plowable End Sections

18	02771000*	Detectable Warning Panel	Each

In place

A Item includes all labor and materials required for construction of Detectable Warning Surface.

B. Item includes grinding off any existing curb lip at the bottom of the access ramp to make the transition from the ramp to the asphalt smooth.

19	02771002P	Concrete Curb and Gutter Type B1	Feet

Measured along the roadway face. Include base course for curb and gutter. Includes removal and replacing roadway base course and asphalt (minimum 2' from lip of gutter) as required to place new curb and gutter. Includes removal and disposing of existing curb and gutter.

Price Adjustments for Strength

A. When concrete is below specified strength:

1. Department may accept item at a reduced price
2. The pay factor will be applied to the portion of the item that is represented by the strength tests that fall below specified strength.
3. Department will calculate the pay factor as follows:

Psi below specified strength:	Pay Factor:
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

B. Item does not include curb and gutter removed and replaced by access ramps

C. Item includes all removal and disposal. Item also includes all labor and material required for construction.

20	02771006*	Pedestrian Access Ramp Type B	Each

In place

Includes all necessary items to construct the new access ramps. Includes base course for the new access ramp. Includes removing and replacing roadway base course and asphalt (minimum 2' from lip of gutter) as required to construct the access ramp. Includes furnishing and constructing the detectable warning surface. Includes any landscape items (4 inches topsoil, sod, sprinklers, etc.) that need to be replaced due to construction of access ramp areas. Includes sawcutting and removing concrete utility foundations and exposed pipes that are within the access ramp area. Includes relocating signs as required. Item includes removal of curb, gutter, sidewalk and existing untreated base course in area where ramp upgrade will be installed. Includes proper disposal of removed items.

Price Adjustments for Strength

A. When concrete is below specified strength:

1. Department may accept item at a reduced price
2. The pay factor will be applied to the portion of the item that is represented by the strength tests that fall below specified strength.
3. Department will calculate the pay factor as follows:

Psi below specified strength:	Pay Factor:
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

21	02771008*	Pedestrian Access Ramp Type E	Each

In place
Includes all necessary items to construct the new access ramps. Includes base course for the new access ramp. Includes removing and replacing roadway base course and asphalt (minimum 2' from lip of gutter) as required to construct the access ramp. Includes furnishing and constructing the detectable warning surface. Includes any landscape items (4 inches topsoil, sod, sprinklers, etc.) that need to be replaced due to construction of access ramp areas. Includes sawcutting and removing concrete utility foundations and exposed pipes that are within the access ramp area. Includes relocating signs as required. Item includes removal of curb, gutter, sidewalk and existing untreated base course in area where ramp upgrade will be installed. Includes proper disposal of removed items.

Price Adjustments for Strength

A. When concrete is below specified strength:
   1. Department may accept item at a reduced price
   2. The pay factor will be applied to the portion of the item that is represented by the strength tests that fall below specified strength.
   3. Department will calculate the pay factor as follows:

Psi below specified strength:	**Pay Factor:**
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

Section 02772: Surface Courses – Pothole Patching

22	02772000*	Surface Courses – Pothole Patching (Contingent Item)	Square Feet

In place
A. Include the cost associated with the excavation or rotomilling of 4" of asphalt, saw cutting cleaning the pothole area, base coarse, tack coat, and 1/2" HMA paving.
B. Replace removed asphalt with 1/2" HMA until roadway profile is restored to match surface of adjacent existing OGSC.

Section 02776: Concrete Sidewalk, Median Filler, and Flatwork

23	027760010	Concrete Sidewalk	Square feet

In place, include excavation if Roadway Excavation is not a bid item. Item includes furnishing base course. Item includes removing and disposing of existing concrete sidewalk and base course.

Price Adjustments for Strength

A. When concrete is below specified strength:
   1. Department may accept item at a reduced price
   2. The pay factor will be applied to the portion of the item that is represented by the strength tests that fall below specified strength.
   3. Department will calculate the pay factor as follows:

Psi below specified strength:	**Pay Factor:**
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

24	**027760030**	**Concrete Flatwork 4 inch thick**	**Square feet**

In place
Price Adjustments for Strength
A. When concrete is below specified strength:
1. Department may accept item at a reduced price
2. The pay factor will be applied to the portion of the item that is represented by the strength tests that fall below specified strength.
3. Department will calculate the pay factor as follows:

Psi below specified strength:	**Pay Factor:**
1 - 100	0.98
101 - 200	0.94
201 - 300	0.88
301 - 400	0.80
More than 400	0.50 or Engineer may reject

Section 02786: Open Graded Surface Course (OGSC)

25	**027860010**	**Open Graded Surface Course**	**Ton**

In place
A. Include aggregates and all additives including hydrated lime. Provide additional measurements for Asphalt Binder.

26	**027860020**	**Asphalt Cement PG 64-34**	**Ton**

Section 02892: Traffic Signal

25	**02892000***	**Install State Furnished Video Detection Cable Circuit**	**Each**

In place
A. Includes all labor and material other than cable, required to install state furnished video detection cable circuit to provide circuit for operation of one camera.

Section 02961: Rotomilling

27	**02961001***	**Rotomilling - 4 inch**	**Square Yard**

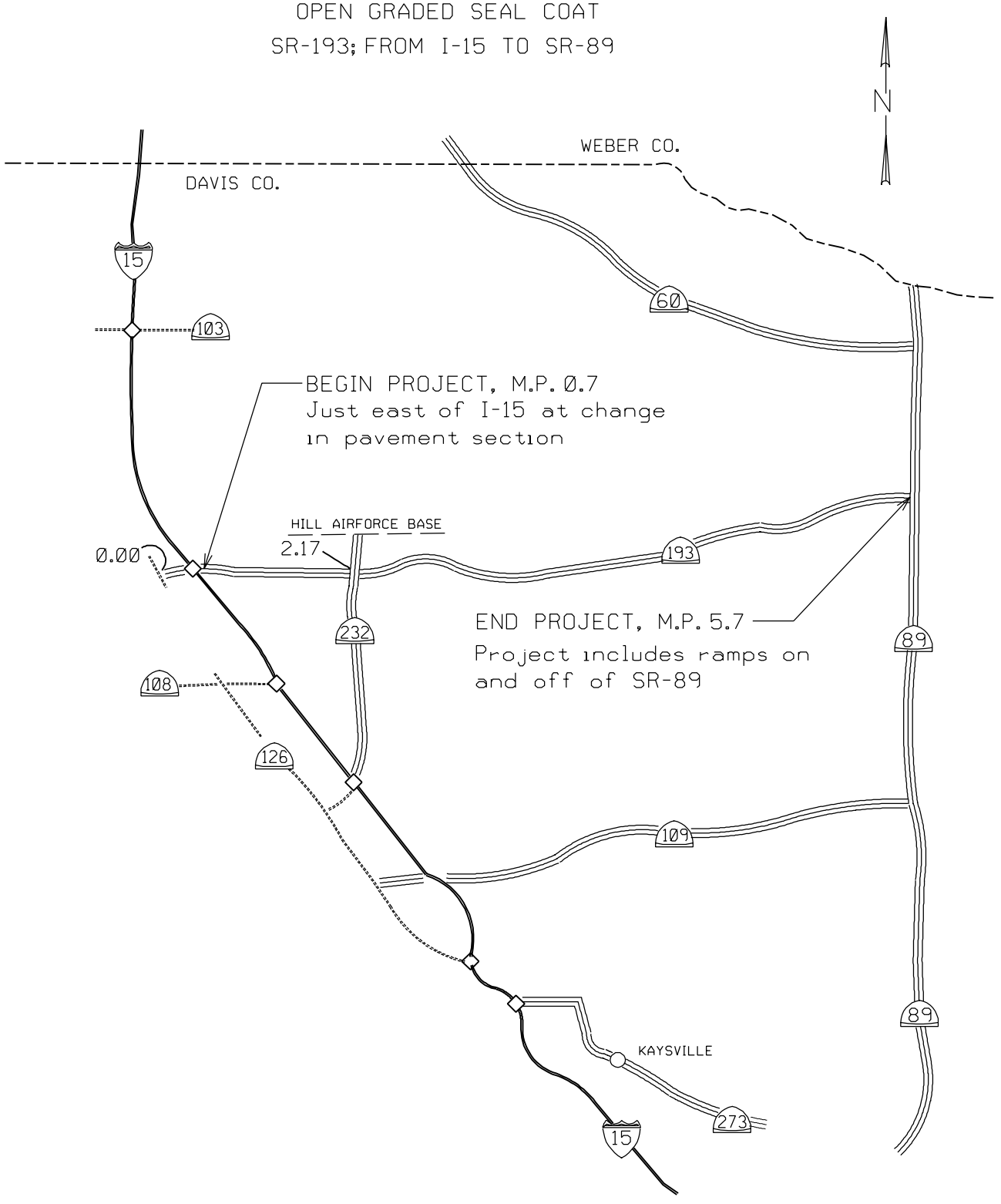
IX. LOCATION MAP

CONTRACTUAL MAINTENANCE PROJECT

SP-Ø193(3)1

OPEN GRADED SEAL COAT

SR-193; FROM I-15 TO SR-89



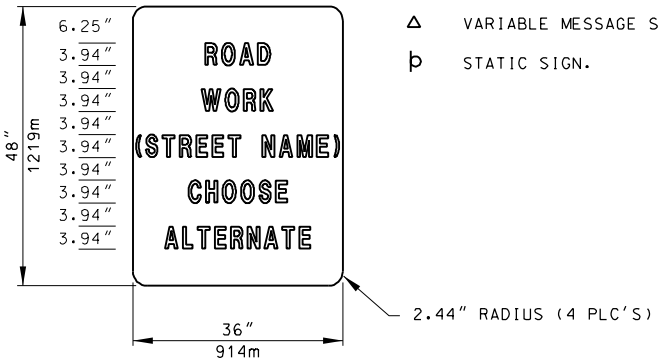
MAINTENANCE OF TRAFFIC (MOT) CONCEPT

NOTES:

1. VMS AND SIGNS WILL BE PLACED AT LEAST ONE INTERSECTION IN ADVANCE OF WORK ZONE OR AS DIRECTED BY THE ENGINEER.
2. MOT WILL BE CUSTOMIZED FOR EACH PROJECT.
3. THE NUMBER & LOCATION OF VMS & STATIC SIGNS SHALL BE ADJUSTED TO SUIT ACTUAL FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
4. TYPICALLY VMS PLACED ON 4 LANE CROSS STREETS AND STATIC SIGNS PLACED ON 2 LANE CROSS STREETS.
5. VMS SIGNS SHALL BE IN PLACE 1 WEEK BEFORE CONSTRUCTION BEGINS.
6. PROVIDE OVERLAY PANEL FOR STREET NAME FOR EACH LOCATION.
7. APPROXIMATELY 4 VMS SIGNS REQUIRED ON THIS PROJECT.

STATIC SIGN

B/O 36" x 48"



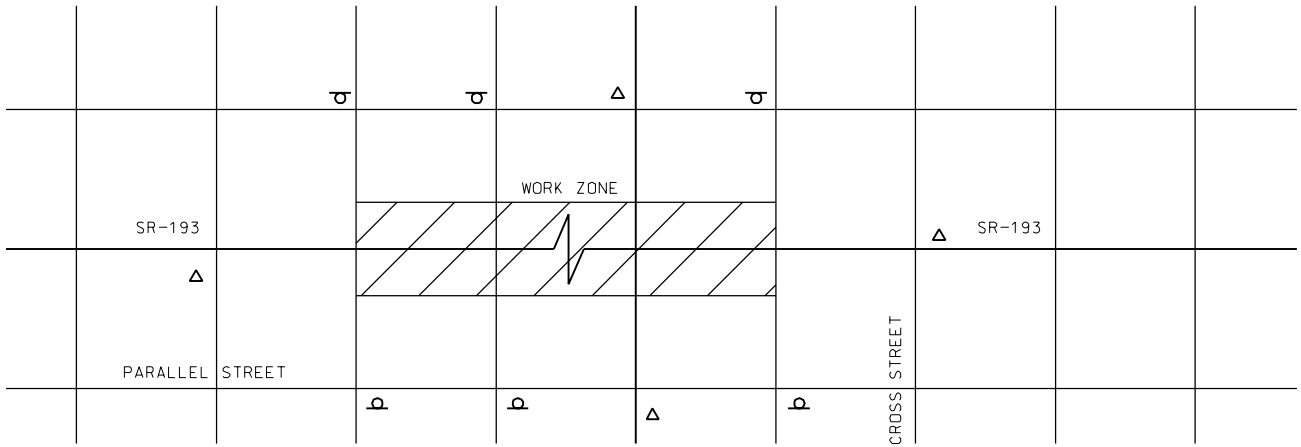
LETTERS FOR STATIC SIGN ARE SERIES "C"

LEGEND:

△ VARIABLE MESSAGE SIGN (VMS)

þ STATIC SIGN.

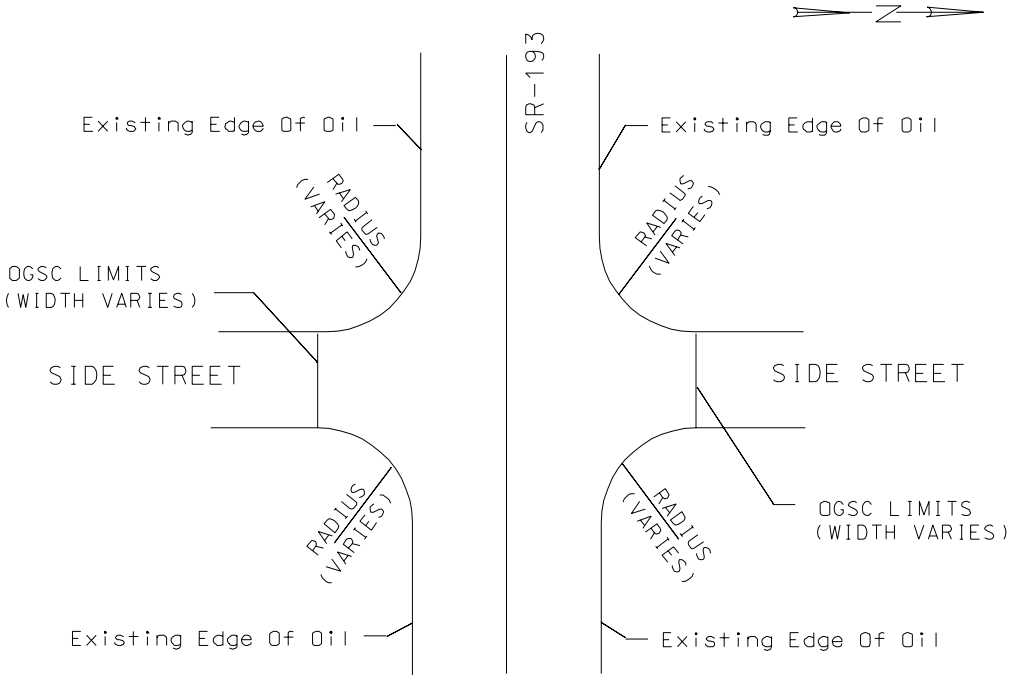
STATIC SIGN MESSAGE
PLACED AT CROSS STREETS



SP-0193(31)

DETAIL

TYPICAL OGS LIMITS



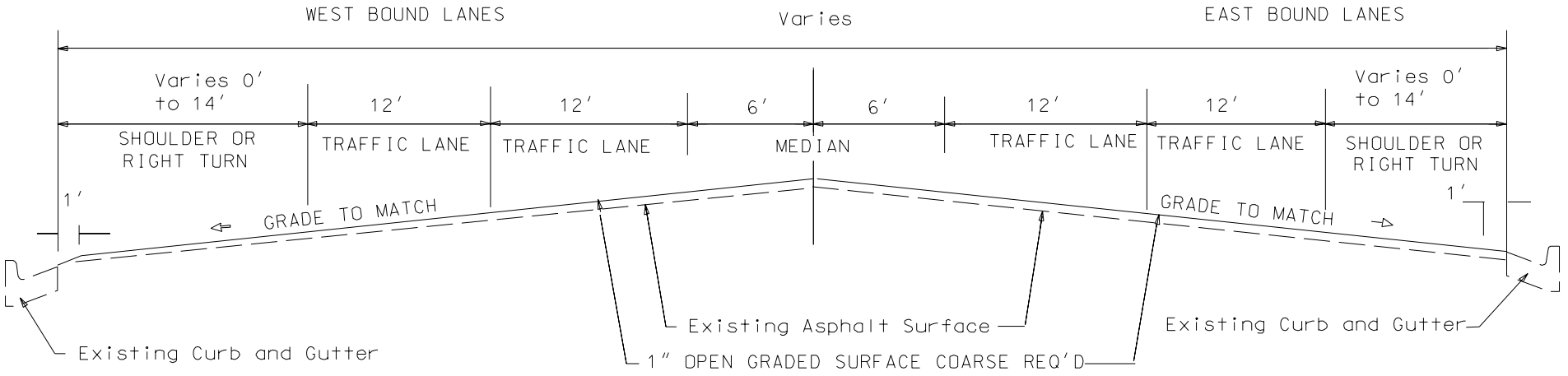
OGSC REQ'D

SEE SURFACING SUMMARY FOR APROXIMATE QUANTITIES AND LOCATIONS

NOTE: PLACE OGSC ON APPROACHES LISTED IN THE DETAILED REPORT PER LIMITS SPECIFIED OR AS PER ABOVE DETAIL.

TYPICAL SECTION #1

SP-0193(3)1

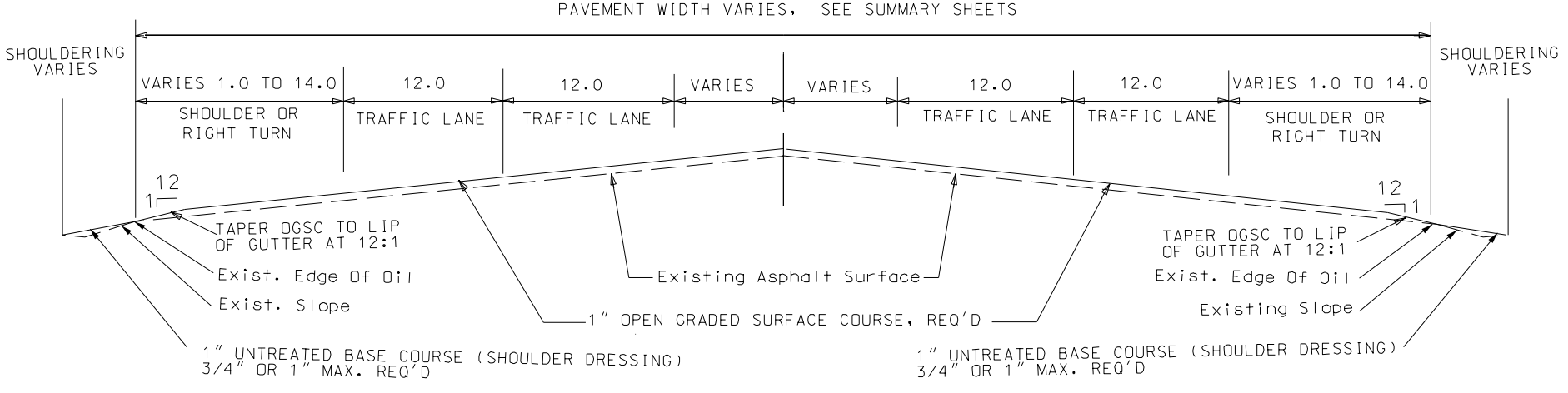


R.P. 0.7 - R.P. 5.7

NOTE1: ALL DIMENSIONS ARE IN FEET
NOTE2: MAINTAIN PEAK OF CROWN IN CENTER OF PAINTED MEDIAN AS SHOWN.
NOTE3: LANE WIDTHS ARE APPROX.

TYPICAL SECTION #2

SP-0193(3)1 SR-193 FROM I-15 TO SR-89



NOTE1: 1. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
2. PAVEMENT SECTIONS WITH NO CURB AND GUTTER VARY.
3. LANE WIDTHS ARE APPROXIMATE.
4. MAINTAIN PEAK OF CROWN IN CENTER OF ROADWAY AS SHOWN.

Summary Report

Project: SP-0193(3)1 **Version: 1**

SR-193; FROM I-15 TO SR-89

Detail	Alt Group	Alt #	Description
10 - ROADWAY	0	0	OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7

Item Number	Description	Qty	Unit
012850010	Mobilization	1	Lump
013150010	Public Information Services	1	Lump
015540005	Traffic Control	1	Lump
01557000*	Maintenance of Traffic (MOT)	1	Lump
01892001*	Reconstruct Catch Basin or Cleanout Box	35	Each
01892004*	Reconstruct Valve Box	60	Each
01892005*	Reconstruct Manhole	45	Each
01892006*	Prelower Catch Basin or Cleanout Box (Contingent Item)	1	Each
01892007*	Prelower Valve Box	2	Each
01892008*	Prelower Manhole	2	Each
02721007*	Untreated Base Course (shoulder dressing) 3/4 or 1 inch Max	100	Ton
027410060	HMA - 3/4 inch	900	Ton
027480050	Emulsified Asphalt SS-1H	250	Ton
02768000*	4 inch Pavement Marking Tape - White	25,250	ft
02768001*	8 inch Pavement Marking Tape - White	5,000	ft
02768003*	4 inch Pavement Marking Tape - Yellow	61,000	ft
02768020*	Pavement Message (Preformed Thermoplastic)	210	Each
02771000*	Detectable Warning Panel	24	Each
02771002P	Concrete Curb and Gutter Type B1	80	ft
02771006*	Pedestrian Access Ramp Type B	2	Each
02771008*	Pedestrian Access Ramp Type E	25	Each
02772000*	Surface Coarse - Pothole Patching (Contingent item)	800	sq ft
027760010	Concrete Sidewalk	100	sq ft
027760030	Concrete Flatwork 4 inch thick	50	sq ft
027860010	Open Graded Surface Course	14,707	Ton
027860020	Asphalt Cement PG 64-34	1,000	Ton
02892000*	Install State Furnished Video Detection Cable Circuit	6	Each
02961001*	Rotomilling	5,500	sq yd

Detailed Report

SP-0193(3)1 **Version: 1**

SR-193; FROM I-15 TO SR-89

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
01892001*	**Reconstruct Catch Basin or Cleanout Box**	35	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	.88	RIGHT			1.0	
02	.95	RIGHT			1.0	
03	1.32	RIGHT			1.0	
04	3.67	RIGHT			1.0	
05	5.32	RIGHT			1.0	
06	5.36	RIGHT			1.0	
07	4.2	LEFT			1.0	
08	4.15	LEFT			1.0	
09	3.67	LEFT			1.0	
10	3.42	LEFT			1.0	
11	3.3	LEFT			1.0	
12	3.27	LEFT			1.0	
13	3.24	LEFT			1.0	
14	3.19	LEFT			1.0	
15	3.13	LEFT			1.0	
16	2.75	LEFT			1.0	
17	2.68	LEFT			1.0	
18	2.61	LEFT			1.0	
19	2.55	LEFT			1.0	
20	2.5	LEFT			1.0	
21	2.44	LEFT			1.0	
22	2.38	LEFT			1.0	
23	2.32	LEFT			1.0	
24	2.26	LEFT			1.0	
25	1.46	LEFT			1.0	
26	1.40	LEFT			1.0	
27	1.37	LEFT			1.0	
28	1.33	LEFT			1.0	
29	1.29	LEFT			1.0	
30	1.24	LEFT			1.0	
31	1.2	LEFT			1.0	
32	1.17	LEFT			1.0	
					32.0	

Note #	Note
1	Quantities are approximate. Contractor is to independently verify all locations of Catch Basins and Cleanout Boxes, and prepare these items for rotomilling.

Note #	Note
2	Over night plating is required for Boxes in traveled lanes.
3	Some catch basins/cleanout boxes are larger than normal and have large concrete aprons, this item includes the extra labor and material required to reconstruct these larger catch basins/cleanout boxes.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
01892004*	**Reconstruct Valve Box**	60	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	.88	RIGHT			1.0	
02	.95	RIGHT			1.0	
03	1.03	RIGHT			2.0	
04	1.49	RIGHT			1.0	
05	1.65	RIGHT			1.0	
06	1.83	RIGHT			2.0	
07	1.9	RIGHT			1.0	
08	1.98	RIGHT			2.0	
09	2.03	RIGHT			1.0	
10	2.85	RIGHT			2.0	
11	3.35	RIGHT			2.0	
12	3.5	RIGHT			1.0	
13	3.9	RIGHT			1.0	
14	5.29	LEFT			4.0	
15	5.11	LEFT			4.0	
16	4.95	LEFT			1.0	
17	4.94	LEFT			1.0	
18	4.83	LEFT			1.0	
19	4.79	LEFT			1.0	
20	4.62	LEFT			1.0	
21	4.28	LEFT			2.0	
22	4.2	LEFT			1.0	
23	4.15	LEFT			1.0	
24	3.96	LEFT			1.0	
25	3.91	LEFT			1.0	
26	3.67	LEFT			1.0	
27	3.66	LEFT			2.0	
28	3.47	LEFT			2.0	
29	3.38	LEFT			1.0	
30	3.37	LEFT			4.0	
31	3.25	LEFT			2.0	
32	3.24	LEFT			2.0	
33	3.21	LEFT			1.0	
34	1.34	LEFT			2.0	
35	1.25	LEFT			2.0	
					56.0	

Note #	Note
1	Quantities are approximate. Contractor is to independently verify all locations of valve boxes, and prepare these items for rotomilling.
2	Over night plating is required for valves in traveled lanes.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
01892005*	**Reconstruct Manhole**	45	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	.72	RIGHT			1.0	
02	.88	RIGHT			1.0	
03	.94	RIGHT			1.0	
04	1.0	RIGHT			1.0	
05	1.06	RIGHT			1.0	
06	1.13	RIGHT			1.0	
07	1.18	RIGHT			1.0	
08	1.4	RIGHT			1.0	
09	1.90	RIGHT			1.0	
10	3.0	RIGHT			1.0	
11	3.35	RIGHT			1.0	
12	3.48	RIGHT			1.0	
13	3.66	RIGHT			2.0	
14	3.95	RIGHT			1.0	
15	4.02	RIGHT			1.0	
16	4.09	RIGHT			1.0	
17	4.11	RIGHT			1.0	
18	4.23	RIGHT			1.0	
19	4.28	RIGHT			1.0	
20	4.33	RIGHT			1.0	
21	4.37	RIGHT			1.0	
22	4.43	RIGHT			1.0	
23	4.5	RIGHT			1.0	
24	4.57	RIGHT			1.0	
25	4.62	RIGHT			1.0	
26	5.10	RIGHT			1.0	
27	5.55	LEFT			1.0	
28	5.47	LEFT			1.0	
29	5.44	LEFT			1.0	
30	5.29	LEFT			1.0	
31	5.11	LEFT			1.0	
32	4.96	LEFT			1.0	
33	4.28	LEFT			1.0	
34	3.47	LEFT			2.0	
35	3.4				1.0	
36	3.38				1.0	
37	3.37				1.0	

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
38	3.21				1.0	
39	1.6				1.0	
40	1.46				2.0	
					43.0	

Note #	Note
1	Quantities are approximate. Contractor is to independently verify all locations of Manholes, and prepare these items for rotomilling.
2	Over night plating is required for manholes in the traveled lanes.

01892006* **Prelower Catch Basin or Cleanout Box (Contingent Item)** 1 Each

Note #	Note
1	Quantities are approximate. Contractor is to independently verify all locations of Catch Basins and Cleanout Boxes, and prepare these items for rotomilling.

01892007* **Prelower Valve Box** 2 Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
	4.28	LEFT			1.0	
					1.0	

Note #	Note
1	Quantities are approximate. Contractor is to independently verify all locations of valve boxes, and prepare these items for rotomilling.

01892008* **Prelower Manhole** 2 Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
	4.28	RIGHT			1.0	
					1.0	

Note #	Note
1	Quantities are approximate. Contractor is to independently verify all locations of Manholes, and prepare these items for rotomilling.

02721007* **Untreated Base Course (shoulder dressing) 3/4 or 1 inch Max** 100 Ton

Note #	Note
1	Assumed unit weight of Untreated Base 144 lbs./cu.ft.
2	Assumed 1 inch depth and a 3 foot runout. Engineer to determine areas where shoulder dressing is required.
3	Quantity includes leveling, grading and compaction of material along roadway as required.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
027410060	**HMA - 3/4 inch**	900	Ton

Note #	Note
1	Assumed unit weight of HMA 145 lbs./cu.ft.
2	For stationing see item 02961001*

027480050	**Emulsified Asphalt SS-1H**	250	Ton

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
	0.7		5.2		60.0	Quantity for HMA bid item.
	0.7		5.2		190.0	Quantity for OGSC bid item.
					250.0	

Note #	Note
1	Assumed rate of .2 gallon/sq ft. Also assume 240 gallons/ton

02768000*	**4 inch Pavement Marking Tape - White**	25,250	ft

Note #	Note
1	Use quantity for bidding purposes. Match existing striping configuration in field. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.

02768001*	**8 inch Pavement Marking Tape - White**	5,000	ft

Note #	Note
1	Use quantity for bidding purposes. Match existing striping configuration in field. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.

02768003*	**4 inch Pavement Marking Tape - Yellow**	61,000	ft

Note #	Note
1	Use quantity for bidding purposes. Match existing striping configuration in field. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
02768020*	**Pavement Message (Preformed Thermoplastic)**	210	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	1500 EAST				13.0	5 SB, 8 CW
02	1600 EAST	M.P. 1.03			2.0	2 SB
03	UNIVERSITY PARK BLVD.				47.0	11 SB 36 CW
04	1100 WEST				2.0	2 SB
05	725 WEST				2.0	2 SB
06	HILL FIELD				29.0	13 SB 16 CW
07	2.37				1.0	1 SB, do not put back SECW
08	2.6				1.0	1 SB
09	2.8				1.0	1 SB
10	3.13				2.0	2 SB
11	750 EAST				2.0	2 SB
12	FAIRFIELD				63.0	15 SB 48 CW
13	3.46				1.0	1 SB
14	3.68				2.0	2 SB
15	3.92				1.0	1 SB
16	CHURCH				13.0	3 SB 10 CW
17	1600 EAST	M.P. 4.15			2.0	2 SB
18	1650 EAST				2.0	2 SB
19	4.28				2.0	2 SB
20	2000 EAST				1.0	1 SB
21	2900 NORTH				2.0	2 SB
22	2400 EAST				2.0	2 SB
23	2650 EAST				3.0	3 SB
24	HOBBS CR				2.0	2 SB
					198.0	

Note #	Note
1	SB=Stop Bar, CW=Cross Walk, AR=Arrows, ONLY=ONLY, SECW=Special Emphasis Crosswalk
2	Add stop bars at all side streets.
3	Use quantity for bidding purposes. Match existing striping configuration in field. Supply Engineer with spreadsheet or plan sheet noting existing striping prior to placing OGSC.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
02771000*	**Detectable Warning Panel**	24	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	UNIVERSITY PARK BLVD.				3.0	NE & SE & SW Radius
02	725 WEST				2.0	SE & SW Radius
03	HILLFIELD				2.0	Pad on SE & SW Island & Pad on SW Radius
04	HILLFIELD				2.0	2 pads on NW Island
05	FORT LANE				0.0	Don't place pads
06	3.25				0.0	Don't place pads
07	3.44				2.0	NE & NW Radius
08	FAIRFIELD				2.0	NE & NW Radius
09	N. HILLS DR				0.0	Don't place pads SE & SW Radius
10	N. HILLS DR				2.0	NE & NW Radius
11	CHURCH ST.				1.0	North side
12	1600 E	M.P. 4.1			2.0	SE & SW Radius
13	1650				2.0	SE & SW Radius
14	2400 E				2.0	NE & NW Radius
15	5.08				2.0	NE & NW Radius
					24.0	

Note #	Note
1	Use quantity for bidding purposes. Contractor to verify exact locations and applications of detectable warning pads with the Engineer. See Standard Drawing GW5.
2	Item includes all labor and materials required for the construction of the Detectable Warning Surface.
3	Item includes grinding off any existing curb lip at the bottom of any existing access ramps to make the transition from the ramp to the asphalt smooth.

Item Number	Description	Use Qty	Unit
02771002P	**Concrete Curb and Gutter Type B1**	80	ft

Note #	Note
1	Quantity is to be used only in adjacent areas that are effected by the pedestrian access ramp upgrade. Does not include curb and gutter removed and replaced by the access ramps.
2	Item includes all removal and disposal. Item also includes all labor and material required for construction.
3	Match existing curb and gutter.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
02771006*	**Pedestrian Access Ramp Type B**	2	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	HILLFIELD				1.0	SW island
02	3.92				1.0	
					2.0	

Note #	Note
1	Use quantity for bidding purposes. Contractor to verify exact locations and applications of Type B Pedestrian Access Ramps with the Engineer. See Standard Drawing GW5.
2	Based on an average of 120 square feet per ramp.
3	Item includes removal and disposal of curb & Gutter, old ramp, sidewalk & untreated base in areas where the Pedestrian Ramp upgrade will be installed. Item also includes all labor and material required for the construction of the ramps.

02771008*	**Pedestrian Access Ramp Type E**	25	Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	1500 EAST				2.0	SE & SW Radius
02	1100 WEST				2.0	SE & SW Radius
03	725 WEST				2.0	SE & SW Radius
04	1.93				2.0	SE & SW Radius
05	HILLFIELD				2.0	NW & SE radius
06	2.37				2.0	SE & SW Radius
07	2.6				1.0	SW Radius
08	FAIRFIELD				2.0	SE & SW Radius
09	3.8				2.0	SE & SW Radius
10	CHURCH ST.				2.0	SE & SW Radius
11	1600 E				2.0	SE & SW Radius
12	2000 E				2.0	SE & SW Radius
13	2900 NORTH				2.0	SE & SW Radius
					25.0	

Note #	Note
1	Use quantity for bidding purposes. Contractor to verify exact locations and applications of Type E Pedestrian Access Ramps with the Engineer. See Standard Drawing GW5.
2	Item includes removal and disposal of curb & Gutter, old ramp, sidewalk & untreated base in areas where the Pedestrian Ramp upgrade will be installed. Item also includes all labor and material required for the construction of the ramps.
3	based on an average of 150 square feet per ramp.

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
02772000*	**Surface Coarse - Pothole Patching (Contingent item)**	800	sq ft

Note #	Note
1	Item includes: excavation, base coarse, compaction, tack oil and HMA. Engineer to determine areas.

027760010	**Concrete Sidewalk**	100	sq ft

Note #	Note
1	Quantity is to be used in adjacent areas that are effected by the pedestrian access ramp upgrade. Does not include Sidewalk removed and replaced by the access ramps.
2	Item includes removal and disposal of sidewalk in areas where sidewalk upgrade will be installed. Item also includes all labor and material required for the construction of the sidewalk.

027760030	**Concrete Flatwork 4 inch thick**	50	sq ft

Note #	Note
1	Quantity is to be used only in adjacent areas that are effected by the pedestrian access ramp upgrade. Does not include sidewalk or flat work removed and replaced by the access ramps.

Detailed Report

SP-0193(3)1 **Version: 1**

SR-193; FROM I-15 TO SR-89

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
027860010	**Open Graded Surface Course**	14,707	Ton

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	0.7		2.0		3,432.0	
02	2.0		2.3		891.0	
03	2.3		5.2		7,943.0	
04	5.2		5.7		1,436.0	
05					8.0	1500 E
06					6.0	1600 E
07					26.0	University Park Blvd. 13 ton per side
08					8.0	1100 W
09					8.0	725 W
10					156.0	SR-232 Right side L=300'
11					5.0	M.P. 2.38
12					5.0	M.P. 2.6
13					9.0	Fort Lane
14					16.0	M.P. 3.1 8 ton per side
15					10.0	750 E
16					12.0	Fairfield Rd.
17					9.0	3.44
18					24.0	North Hills Dr. 12 ton per side
19					49.0	Wall Mart widening
20					5.0	3.9
21					12.0	Church St.
22					5.0	1600 E
23					5.0	1650 E
24					5.0	4.28
25					5.0	2000 E
26					5.0	2900 N
27					5.0	2400 E
28					16.0	Hobbs Creek Dr. 8 ton per side
29					120.0	South bound 89 on ramp
30					180.0	North bound 89 on ramp
31					128.0	South bound 89 off ramp
32					128.0	North bound 89 off ramp
33					35.0	Widening before intersections
					14,707.0	

Note #	Note
1	Assume a unit weight of 150 pounds per cubic foot.

Note #	Note
2	Assume that the depth of the overlay is 1.0 inches unless otherwise specified in the comments.

027860020 **Asphalt Cement PG 64-34** 1,000 Ton

Note #	Note
1	For OGSC stationing information see 02786001*. Assume 5.6% of OGSC.
2	For Hma stationing information see 02961001*. Assume 5.6% of HMA

02892000* **Install State Furnished Video Detection Cable Circuit** 6 Each

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
	HILLFIELD				6.0	
					6.0	

Note #	Note
1	Use quantity for bidding purposes.
2	Item includes all labor and material required to install state furnished video detection cable circuit.

Detailed Report

SP-0193(3)1 Version: 1

SR-193; FROM I-15 TO SR-89

10 - ROADWAY **Alt Group: 0** **Alt #: 0** **OGSC overlay on SR-193 from M.P. 0.7 to M.P. 5.7**

Item Number	Description	Use Qty	Unit
02961001*	**Rotomilling**	5,500	sq yd

Line/Sheet	From Station	From Offset	To Station	To Offset	Qty	Comment
01	M.P. 0.8	W BOUND			195.0	L=220' W=8' inside lane
02	M.P. 0.86	E BOUND			94.0	L=70' W=12' center lane
03	M.P. 1.7	E BOUND			27.0	L=20' W=12' inside lane
04	M.P. 1.9	E BOUND			360.0	L=30' W=12' outside lane
05	M.P. 2.04	E BOUND			747.0	L=280' W=24' outside & shoulder
06	HILLFIELD	E BOUND			240.0	L=90' W=24' inside & outside lanes
07	HILLFIELD	N BOUND			300.0	L=112' W=24' turn & inside lane
08	HILLFIELD	W BOUND			735.0	L=220' W=30' outside lane & shoulder
09	HILLFIELD	S E RADIUS			54.0	L=60' W=8' around the radius
10	FAIRFIELD	S BOUND			140.0	L=50' W=25'
11	FAIRFIELD	E BOUND			140.0	L=50' W=25'
12	4.09	W BOUND			90.0	L=100' W=8' inside lane
13	4.28				390.0	L=83' W=42' Across SR-193
14	4.75	W BOUND			225.0	L=100' W=20' inside & outside lane
15					1,500.0	Engineer's discretion
					5,237.0	

Note #	Note
1	Rotomill and patch to repair failing pavement, verify exact locations with Engineer.
2	Rotomilling depth will vary between a 0 inch to 4 inch depth.

XII. STANDARD DRAWINGS INDEX

(Change Seven, Dated 02/02/04)

UTAH DEPARTMENT OF TRANSPORTATION

X	NUMBER	TITLE	CURRENT DATE
		Advanced Traffic Management System (AT)	
	AT 1	Legend Sheet	07/03/02
	AT 2	Ramp Meter Details	07/03/02
	AT 3	Ramp Meter Sign Panel	07/03/02
	AT 4	Typical Ramp Meter Signal Head Mounting	07/03/02
	AT 5	Loop Installation	07/03/02
	AT 6	Conduit Details	07/03/02
	AT 7	Polymer-Concrete Junction Box Details	04/24/03
	AT 8	ATMS Cabinet w/120V Disconnect	07/03/02
	AT 9	ATMS Cab With Stepdown Transformer	07/03/02
	AT 10	Domed CCTV Details	07/03/02
	AT 11	CCTV Pole Detail	07/03/02
	AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	07/03/02
	AT 13	120V VMS Cab Foundation Details	07/03/02
	AT 14	Weigh In Motion Piezo Detail	07/03/02
	AT 15	RWIS Site and Foundation Details	10/30/03
	AT 16	RPU Tower Base and Service Pad Layout	10/30/03
	AT 17	Ground Rod Installation and Tower Grounding	10/30/03
		Barriers (BA)	
	BA 1A	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 1B	Precast Concrete Full Barrier Standard Section	12/19/02
	BA 2	Precast Concrete Half Barrier Standard Section	07/03/02
	BA 3	Cast In Place Constant Slope Barrier	12/19/02
	BA 4	Beam Guardrail Hardware	07/03/02

X	NUMBER	TITLE	CURRENT DATE
	BA 4A	Guardrail Transition	07/03/02
	BA 4B	Beam Guardrail Installation	12/19/02
	BA 4C	Beam Guardrail Anchor Type I	12/19/02
	BA 5	Traffic Control Cable	07/03/02
		Catch Basins and Cleanouts (CB)	
X	CB 1	Standard Catch Basin	07/03/02
	CB 2	Curb Inlet Catch Basin	04/24/03
	CB 3	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	07/03/02
	CB 4	Solid Cover For Standard Drawing DB 1 MS-18 Loading	07/03/02
	CB 5	Standard Screw Gate And Frame	07/03/02
	CB 6A	Standard Drop Inlet Details General Notes And Installation Detail	07/03/02
X	CB 6B	Standard Catch Basin And Cleanout Box Drop Inlet Type "A" Details	07/03/02
X	CB 6C	Standard Catch Basin And Cleanout Box Drop Inlet Type "B" Details	07/03/02
X	CB 6D	Standard Catch Basin And Cleanout Box Drop Inlet Type "C" Details	07/03/02
X	CB 6E	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
X	CB 6F	Standard Catch Basin And Cleanout Box Drop Inlet With Attached Apron Details	07/03/02
X	CB 6G	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Details	07/03/02
	CB 6H	Standard Catch Basin And Cleanout Box Drop Inlet Type "D" Tables	07/03/02
	CB 7	Standard Curb And Gutter Drop Inlet	07/03/02
	CB 8A	Double Catch Basin	07/03/02
	CB 8B	Double Catch Basin	07/03/02
	CB 9A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
	CB 9B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 9C	Standard Catch Basin and Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	07/03/02
	CB 9D	Standard Catch Basin and Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	07/03/02

X	NUMBER	TITLE	CURRENT DATE
X	CB 10A	Standard Catch Basin and Cleanout Box Situation & Layout	07/03/02
X	CB 10B	Standard Catch Basin and Cleanout Box Section Details	07/03/02
	CB 10C	Standard Catch Basin and Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	07/03/02
		Crash Cushions (CC)	
	CC 1	Crash Cushion Markings	07/03/02
	CC 2	Crash Cushion Drainage Details Guideline A	07/03/02
	CC 3	Crash Cushion Drainage Details Guideline B	07/03/02
	CC 4	Details For Placement Crash Cushions Type A, B, & D	07/03/02
	CC 5	Grading And Placement Detail Crash Cushion Type C	07/03/02
	CC 6	Crash Cushion Type E Sand Barrel Details	12/19/02
	CC 7	Grading & Installation Details Crash Cushion Type F	04/24/03
	CC 8	Grading & Installation Details Crash Cushion Type G	04/24/03
	CC 9A	Grading & Installation Details Crash Cushion Type H	04/24/03
	CC 9B	Grading & Installation Details Crash Cushion Type H	04/24/03
		Diversion Boxes (DB)	
X	DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	07/03/02
X	DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	07/03/02
	DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls and Apron Detail	07/03/02
	DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	07/03/02
	DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	07/03/02
	DB 2D	Standard Diversion Box Type "G" Hand Slide Details	07/03/02

X	NUMBER	TITLE	CURRENT DATE
	DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	07/03/02
	DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	07/03/02
	DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	07/03/02
	DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" & "C" Details	07/03/02
	DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	07/03/02
	DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP and Up To 54" CMP	07/03/02
	DB 3C	Standard Diversion Box With Manhole Cover 48" - 72" RCP and 60" to 84" CMP	07/03/02
		Design Drawings (DD)	
	DD 1	Superelevation and Widening	06/26/03
	DD 2	Surface Ditch, Benched Slope, and Cut Ditch Details	12/18/03
	DD 3	Climbing Lanes	06/26/03
	DD 4	Geometric Design for Freeways (Roadway)	12/18/03
	DD 5	Entrance and Exit Ramps At Crossroads	08/28/03
	DD 6	Entrance and Exit Ramp Geometrics	08/28/03
	DD 7	Freeway Crossover	08/28/03
	DD 8	Structural Geometric Design Standards Clearances	06/26/03
	DD 9	Structural Geometric Design Standards	06/26/03
	DD 10	Railroad Clearances At Highway Overpass Structures	06/26/03
	DD 11	Rural Multi Lane Highways Other Than Freeways	12/18/03
	DD 12	Rural Two Lane Highways	12/18/03
	DD 13	Frontage and Access Roads (Under 50 ADT)	12/18/03
	DD 14	Typical Rural 2 Lane Road With Median Lane and Deceleration Lane For Intersecting Crossroads	08/28/03
		Drainage (DG)	
	DG 1	Fill Height for Metal Pipe (Steel)	07/03/02
	DG 2	Fill Height for Metal Pipe (Aluminum)	07/03/02
	DG 3	Maximum Fill Height and End Sections For HDPE and PVC Pipes	12/19/02

X	NUMBER	TITLE	CURRENT DATE
	DG 4	Pipe Culverts Minimum Cover	12/19/02
	DG 5	Plastic Pipe, Metal Pipe or Pipe Arch Culvert Bedding	07/03/02
	DG 6	Precast Concrete Pipe Culvert	07/03/02
	DG 7	Gasketted Joints or Coupling Bands for C.M.P.	07/03/02
	DG 8	Metal Culvert End Sections	07/03/02
	DG 9	Miscellaneous Pipe Details	07/03/02
		Environmental Controls (EN)	
	EN 1	Temporary Erosion Control (Check Dams)	07/03/02
	EN 2	Temporary Erosion Control (Silt Fence)	04/24/03
	EN 3	Temporary Erosion Control (Slope Drain and Temporary Berm)	07/03/02
	EN 4	Temporary Erosion Control (Drop Inlet Barriers)	12/19/02
	EN 5	Temporary Erosion Control (Sediment Trap and Curb Inlet Barrier)	07/03/02
		Fence and Gates (FG)	
	FG 1A	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 1B	Right-of-Way Fence and Gates (Wood Posts)	07/03/02
	FG 2A	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 2B	Right-of-Way Fence and Gates (Metal Posts)	07/03/02
	FG 3	Swing Gates Type I for Gates Less Than 17'	07/03/02
	FG 4	Deer Gates	07/03/02
	FG 5	Swing Gates Type II for Gates Wider Than 17'	07/03/02
	FG 6	Chain Link Fence	07/03/02
		Grates, Frames, and Trash Racks (GF)	
X	GF 1	Manhole Frame And Grated Cover	07/03/02
X	GF 2	Manhole Frame And Solid Cover	07/03/02
X	GF 3	Rectangle Grate & Frame	07/03/02
X	GF 4	Directional Flow Grate & Frame	07/03/02
X	GF 5	Solid Cover & Frame	07/03/02
X	GF 6	Manhole Steps	07/03/02

X	NUMBER	TITLE	CURRENT DATE
	GF 7	Standard Screw Grate & Frame	07/03/02
	GF 8	2' x 2' Grate & Frame	07/03/02
	GF 9	28" x 24" Directional Flow and Frame	07/03/02
X	GF 10	Standard Trash Racks 90E X-ing L	07/03/02
X	GF 11	Standard Trash Racks	07/03/02
X	GF 12	Standard Trash Racks	07/03/02
		General Road Work (GW)	
X	GW 1	Raised Median and Plowable End Section	12/19/02
X	GW 2	Concrete Curb and Gutter	06/26/03
X	GW 3	Concrete Curb and Gutter Details	07/03/02
X	GW 4	Concrete Driveways and Sidewalks	07/03/02
X	GW 5	Pedestrian Access	02/27/03
X	GW 6	Right-of-Way Marker	07/03/02
X	GW 7	Newspaper and Mailbox Stop Layout	07/03/02
X	GW 8	Newspaper and Mailbox Support Hardware	07/03/02
X	GW 9	Delineation Hardware	08/28/03
X	GW 10	Delineation Application	08/28/03
X	GW 11	Sidewalks and Shoulders On Urban Roadways	08/28/03
		Paving (PV)	
	PV 1	Joints for Highways with Concrete Traffic Lanes and Shoulders	07/03/02
	PV 2	Pavement/Approach Slab Details	12/19/02
	PV 3	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 4	Concrete Pavement Details for Urban and Interstate	07/03/02
	PV 5	Urban Concrete Pavement Details	07/03/02
	PV 6	Rumble Strips	07/03/02
	PV 7	Rumble Strips - Typical Application	07/03/02
		Signals (SL)	
	SL 1A	Traffic Signals Mast Arm Pole and Luminaire Extension	12/18/03
	SL 1B	Traffic Signals Mast Arm Pole and Luminaire Extension	12/18/03

X	NUMBER	TITLE	CURRENT DATE
	SL 2	Traffic Signals Mast Arm Detail 30' Thru 75'	12/18/03
	SL 3	Underground Service Pedestal Detail	12/18/03
	SL 4	Traffic Signal Mast Arm Pole Foundation	12/18/03
	SL 5	Traffic Signal Pole	12/18/03
	SL 6	Pole Mounted Power Source Details	12/18/03
	SL 7	Span Wire Signal Pole Detail	12/18/03
	SL 8	Signal Head Details	12/18/03
	SL 9	Pedestrian Signal Assembly	12/18/03
	SL 10	Traffic Signal Controller Base Details	12/18/03
	SL 11	Traffic Signal Loop Detector Detail	12/18/03
	SL 12	Traffic Counting Loop Detector Detail	12/18/03
	SL 13	Deleted	N/A
	SL 14	Highway Luminaire Pole Ground Mount	12/18/03
	SL 15	Luminaire Slip Base Detail	12/18/03
	SL 16	Highway Luminaire Pole Barrier Mount	12/18/03
	SL 17	Highway Luminaire Pole Foundation Extension	12/18/03
	SL 18	Single Transformer Substation Details	12/18/03
		Signs (SN)	
	SN 1	Bridge Load Limit Signs	07/03/02
	SN 2	School Speed Limit Assembly	10/30/03
	SN 3	Overhead School Speed Limit Assembly	10/30/03
	SN 4	Flashing Stop Sign	12/19/02
	SN 5	Typical Installation for Milepost Signs	12/19/02
	SN 6	Not Used	
	SN 7	Placement of Ground Mounted Signs	07/03/02
	SN 8	Ground Mounted Timber Sign Post (P1)	12/19/02
	SN 9	Ground Mounted Tubular Steel Sign Post (P2)	07/03/02
	SN 10	Ground Mounted Square Steel Sign Post (P3)	07/03/02
	SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	07/03/02

X	NUMBER	TITLE	CURRENT DATE
	SN 12A	Ground Mounted Sign Installation Details	07/03/02
	SN 12B	Ground Mounted Sign Installation Details	04/24/03
	SN 12C	Ground Mounted Sign Installation Details	07/03/02
		Striping (ST)	
X	ST 1	Object Markers "T" Intersection & Pavement Transition Guidance	12/19/02
X	ST 2	Freeway Crossover Markings	08/28/03
X	ST 3	Typical Pavement Markings	07/03/02
X	ST 4	Crosswalks, Parking and Intersection Approaches	07/03/02
X	ST 5	Painted Median & Auxiliary Lane Details	07/03/02
X	ST 6	Passing/Climbing Lanes Traffic Control	07/03/02
X	ST 7	Pavement Markings & Signs at Railroad Crossing	12/19/02
X	ST 8	Plowable Pavement Markers	07/03/02
	ST 9	School Crossing and School Message	08/28/03
		Structures and Walls (SW)	
	SW 1A	Welded End Guard Unit	07/03/02
	SW 1B	Precast Concrete Cattle Guard	07/03/02
	SW 2	Noise Wall Placement Area	07/03/02
	SW 3A	Precast Concrete Noise Wall 1 of 2	12/19/02
	SW 3B	Precast Concrete Noise Wall 2 of 2	12/19/02
	SW 4A	Precast Concrete Retaining/Noise Wall 1 of 2	12/19/02
	SW 4B	Precast Concrete Retaining/Noise Wall 2 of 2	07/03/02
		Traffic Control (TC)	
X	TC 1A	Construction Zone Channelization Devices	07/03/02
X	TC 1B	Construction Zone Signing	07/03/02
X	TC 2A	Traffic Control General	07/03/02
X	TC 2B	Traffic Control General	07/03/02
X	TC 3	Traffic Control Project Limit Signing	07/03/02
X	TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02

X	NUMBER	TITLE	CURRENT DATE
X	TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	07/03/02
X	TC 6	Traffic Control Pedestrian Routing	07/03/02
X	TC 7	Traffic Control Road Closed, Detour	07/03/02
X	TC 8	Traffic Control Lane Closure	07/03/02
X	TC 9	Traffic Control Multilane Closure	07/03/02
	TC 10	Traffic Control Expressway And Freeway Crossover/Turn-Around	07/03/02
	TC 11	Traffic Control Exit Ramp Gore	07/03/02
	TC 12	Traffic Control Entrance Ramp Gore	07/03/02
	TC 13	Traffic Control Shoulder-Haul Road	07/03/02
X	TC 14	Traffic Control Flagging Operation	07/03/02
X	TC 15	Traffic Control 2 Lane/ 2 Way Seal Coat With Cover Material	07/03/02
X	TC 16	Traffic Control Pavement Marking	07/03/02

January 22, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 00555M

PROSECUTION AND PROGRESS

PART 1 GENERAL

1.12 LIMITATION OF OPERATIONS

A. Minimize traffic interference:

Add the following subsections:

3. Provide at least one lane of traffic in each direction at all times. Once traffic control is established, multiple lane closures will not be permitted. For example, going from one lane to two lanes for a distance then closing the roadway back to one lane in any given direction. Open all lanes of traffic during non-working hours.
4. Provide message boards 7 days prior to start of construction and during construction of major work items.
5. **Use appropriate attenuation devices that meet UDOT Standards for all unprotected barrier, which can include properly designed sand barrel arrays.**

1.15 DETERMINING CONTRACT TIME

B. Determining Contract Time

Replace the following subsection with:

2. Calendar Day: Contract time on a calendar day basis will be determined under section 00570, paragraph 1.2.A: Calendar Day

Add to section 00555, Part 1, the following

1.22 A+B BIDDING METHOD

A. This project will be awarded using an A+B bidding method. The bidding process includes two parts, an "A" component and an "B" component. The A component is the Contract Bid Amount and includes all costs for direct work and pay items. The B component is based on the BIDDER's stated delivery time and is used to account for the "Road User Costs" of the project. This method is only used to determine the successful BIDDER. It is not used to determine the award amount nor final payment to the CONTRACTOR when the project is completed.

B. The Following definitions apply:

1. **Calendar Day** - Every day shown on the calendar, beginning and ending at midnight. For incentive calculations, a full 24 hours will be used to determine one Calendar Day. For disincentive calculations any portion of a day will be considered one Calendar Day.
2. **Substantial Completion** - When the ENGINEER determines and declares in writing that all items of work are completed except shoulder dressing, and that the project is safe and operational for use by the public.
3. **Completion of Work** - When the ENGINEER determines and declared in writing that ALL items of work are complete.
4. **Contract Amount (A Component)** - The summation of the products of the quantities shown in the bid schedule multiplied by the unit bid prices.
5. **Road User Cost (B Component)** - The product of the "Daily Road User Cost" multiplied by the number of days estimated by the CONTRACTOR at the time of bid to Substantially Complete this project. The Daily Road User Cost to be used in this calculation is **$5,000.**

1.23 SUBMIT A BID CONSISTING OF THE A COMPONENT AND THE B COMPONENT

1. (A Component) The Contract Amount
2. (B Component) The number of Calendar Days estimated by the CONTRACTOR to Substantially Complete the project multiplied by the Daily User Cost of $5,000.

A. For calculating the B Component, use a maximum of 45 Calendar Days. When determining the number of Calendar Days, consider all other requirements within the Plans and Specifications. Bids with Calendar Days exceeding 45 days will not be accepted and be considered unresponsive.

B. The successful bid will be determined by the Department as the bid with the lowest sum of the Contract Amount (A Component) and Road User Costs (B Component). This summation will only be used to determine the successful BIDDER and will not be used to determine the Contract Award Amount or final payment to the CONTRACTOR when the project is completed. Only the unit prices from (A Component) will be used to determine final payment to the Contractor, except as adjusted under Section 00555 part1.17.

C. **Early Completion of Work**. If the project is determined to be Substantially Complete before the number of Calendar Days stated in the bid (with adjustments), then the CONTRACTOR will be paid **$5,000** for each Calendar Day of the difference between the number of Calendar Days submitted at bid (with adjustments) and the actual number of Calendar Days used to Substantially Complete the project. The total number of Calendar Days calculated for incentive will not exceed 15 days.

D. **Failure to Substantially Complete the project within the Allocated Time**. Failure to Substantially Complete the project within the number of Calendar Days stated by the CONTRACTOR in the bid (with adjustments) will result in the Daily Road User Cost of **$5,000** being assessed to the CONTRACTOR for every Calendar Day in excess of time until the project is Substantially Complete.

E. **Assessment of Contract Time**. A maximum of 15 Calendar Days will be allowed to complete ALL items of work (Completion of Work) after notification of Substantial Completion. If the Completion of Work is not reached within 15 Calendar Days, the assessment of time charges will resume as outlined in section 00555 part 1.15, item B. Any extensions to the 15-day completion requirement will be at the discretion of the ENGINEER. The ENGINEER will make these extensions in writing.

F. **Traffic Control Delays**. During the course of the contract it is anticipated that permanent and/or temporary traffic control and safety devices may be damaged by the traveling public. Financial compensation for the repair and/or maintenance of these devices will be handled as outlined in the specifications. There will be no additional time added to the contract to repair or maintain these items.

G. **Accident Delays**. During the course of the contract traffic accidents may occur within the limits of the project. No additional time will be added to the contract due to delays caused by these accidents.

H. **Weather Delays**. During the course of the contract it is anticipated that inclement weather will occur. No additional time will be added to the contract due to delays caused by weather.

END SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 00725 M

SCOPE OF WORK

PART 1 GENERAL

1.2 INTENT OF CONTRACT

Modify Article 1.2 by adding the following:

B. Project to provide an Open Graded Seal Course on SR-193 from R.P. 0.7 – R.P. 5.7. Project will begin east of I-15. Project will end at SR-89. Project will also upgrade pedestrian access ramps on SR-193 within the project limits.

C. Schedule major work during off peak traffic periods. Maintain two lanes of traffic in each direction on SR-193 during peak traffic periods. No road closures will be allowed on main line, temporary closures on SR-89 ramps may be permitted upon written approval of Engineer.

D. Peak traffic periods defined as 6:00 A.M. thru 9:00 A.M. and 3:00 P.M. to 6:00 P.M. Monday through Friday on SR-193. Definition of peak hours may be adjusted with field experience if approved by the Engineer.

E. No work permitted on State recognized holidays or holiday weekends.

END SECTION

January 22, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 01452 M

PROFILOGRAPH AND PAVEMENT SMOOTHNESS

PART 3 EXECUTION

3.1 HMA AND OGSC

*Replace line **a of paragraph 3.1.2** with the following:*

a. Analyze the profile using 0.0-inch blanking band.

Replace Table 1 Surface Requirements with the following Table:

Table 1
Surface Requirements

Pavement Category	Class 1 Surface		Class II Surface	
	Section PI	Profile Deviation	Section PI	Profile Deviation
Category	In/mi	in/25ft	in/mi	in/25ft
1 2	30 40	0.3 0.3	N/A N/A	0.3 0.3
Category 1 **Category 2**	National Highway System and Truck Routes (See Section 02741, Table 11) and all other routes with surfaces having three or more opportunities for improving the ride.* All other routes incorporating single lift overlays with not more than two opportunities for improving the ride.*			
Class I	Surfaces consist of all through traffic and climbing lanes, passing lanes, acceleration and deceleration lanes, shoulders, ramps and turn lanes longer than 1000 ft, including bridges and bridge approach slabs with final riding surfaces placed on the contract. Excluded are horizontal curves having a centerline radius of curvature less than 900 ft and areas within the superelevation transitions to these short radius curves.			
Class II	Surfaces consist of all tapers, road approaches, mainline pavement sections with posted regulatory speeds less than 35 MPH, pavement within 15 ft of bridge decks and approach slabs not paved as part of the project, pavement to a point 50 ft beyond the paving limits of the project and all other surfaces not included in Class 1 and surfaces excluded due to horizontal curves.			

* Each opportunity to improve the ride is one of the following: Placing a gravel or treated base course, OGSC, rotomilling, cold recycling, and each lift of paving. Leveling is not considered as an opportunity to improve the ride.

Replace Table 2 HMA with the following Table:

Table 2 OGSC		
Category	**Average Profile Index**	**Incentive/Disincentive per Section**
1	**7.0 or less**	**+$152.00**
	7.1 to 10.0	**+$76.00**
	10.1 to 30.0	**0.00**
	30.1 or more	**-$203.00**
2	**7.0 or less**	**+$152.00**
	7.1 to 10.0	**+$76.00**
	10.1 to 40.0	**0.00**
	40.1 or more	**-$203.00**

END SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT # SP-0193(3)1

SECTION 01557 S

MAINTENANCE OF TRAFFIC (MOT)

PART 1 GENERAL

1.1 SECTION INCLUDES

1. MOT Maintainer
2. Maintenance of Traffic (MOT) plans, materials, and labor necessary for implementation.
3. Variable message signs and construction signs

1.2 RELATED SECTIONS

1. Section 00555: Prosecution and Progress.
2. Section 01554: Traffic Control.
3. Section 02842: Delineators.
4. Section 02891: Traffic Signs.

1.3 REFERENCES

1. Manual on Uniform Traffic Control Devices, Latest Edition (MUTCD).
2. UDOT 2002 Standard Drawings.
3. American Traffic Safety Services Association (ATSSA)

1.4 DEFINITIONS

A. Maintenance of Traffic (MOT) is defined as the work necessary to advise the public of changes to normal traffic flow, and to indicate planned detours and alternate routes to closed roads. It is intended to be used solely as advisory

information to the public.

1.5 POST-BID REQUIREMENTS

1. DEPARTMENT will provide MOT plans to be implemented as part of the bid package.

2. The apparent low bidder will attend a mandatory meeting as detailed in Section 01554, paragraph 1.4, line A.2.

3. Attendees of the mandatory meeting will review the CONTRACTOR's submitted traffic control plans and the DEPARTMENT's supplied MOT plans for compatibility. Modify plans where necessary, as set forth in Section 01554, paragraph 1.6: Traffic Control Plan Requirements.

4. Do not begin work on the project until written approval of the MOT plan is received from the ENGINEER. No item of work can begin until the approved MOT plan is implemented for that phase of work.

1.6 MOT MAINTAINER

1. The Traffic Control Maintainer, as specified in Section 01554, paragraph 1.7 is responsible for maintenance of MOT on the project. No separate payment will be made for maintenance of MOT.

2. Inspect MOT devices daily for compliance with the MOT plans. Submit daily inspection reports on a form acceptable to the ENGINEER Record readings from devices using hour meters on the form.

1.7 MAINTENANCE OF MOT DEVICES

A. Maintain traffic control devices per Section 01554, paragraph 1.8: Maintenance of Work Zone Traffic Control.

1.8 WAGE RATES FOR TRAFFIC CONTROL PERSONNEL (FEDERAL AID JOBS ONLY)

A. Refer to Section 01554, paragraph 1.9, for wage rate information.

1.9 PAYMENT PROCEDURES

A. Partial Payments - Based on the percentage of the project completed, excluding the cost of MOT.
   1. Failure to comply with any of the requirements of this special provision will result in non-compliance.

B. Price Adjustments:
   1. The Department reduces payment if the MOT implemented is not in compliance with the approved MOT plan, as determined by the ENGINEER.
   2. The amount per day by which the CONTRACTOR's compensation will be reduced is calculated using the daily charge in the Schedule of Liquidated Damages in Table 1 of Section 00555 or the Contract lump sum bid price for MOT divided by the number of Contract days, whichever is greater.

C. Payment for change in scope: Negotiate a price adjustment for MOT if the ENGINEER orders a change in the scope of work which requires modification to the approved MOT Plan.

PART 2 PRODUCTS

2.1 SIGNS

A. Refer to Section 02891, Traffic Signs.

B. Type and configuration as directed by the MOT plans.

2.2 VARIABLE MESSAGE SIGNS (VMS)

A. Advance warning device

   1. Conform to guidelines set forth in current edition of the MUTCD.
   2. Messages can be changed on-site and by dial-up modem

PART 3 EXECUTION

3.1 MODIFICATION OF MOT PLANS

1. ENGINEER may modify the MOT plans at any time.

2. Implement changes to the MOT plan before the end of the work shift.

3. Each phase of construction must be covered by an approved MOT plan. If a construction phase is proposed that is not covered by a DEPARTMENT supplied MOT plan, submit a proposed MOT plan to the ENGINEER for approval.
    1. Submit proposed MOT plan to the ENGINEER 10 working days before the proposed MOT plan is to be implemented.
    2. Do not begin work until the proposed MOT plan is approved for use, and has been fully implemented.

3.2 TRAFFIC CONTROL DEVICES

1. Installation and Maintenance:
    1. Install appropriate devices for each construction phase as identified in the appropriate MOT plan.
    2. Maintain devices to provide proper, continuous functionality.
    3. Wash devices weekly unless conditions warrant more frequent cleaning.
    4. Replace any device missing any part of the message or background.

2. Channelizing Devices: Use as directed by the MOT plan.

3. Furnish a daily record of the number and location of all traffic control devices in use.

4. Remove devices from the site of work when they are not needed for the immediate control of traffic.

3.3 VARIABLE MESSAGE SIGN (VMS)

A. The DEPARTMENT will retain control of messages appearing on the VMS. The CONTRACTOR will not change the location or the message configuration of the VMS unless directed to by the ENGINEER in writing.

B. Place in view of oncoming traffic without obstructing traffic flow. Relocate VMS to match field conditions at no additional cost to DEPARTMENT.

C. Provide dial-up modem number to the ENGINEER.

D. Use necessary traffic control devices with VMS to provide safe operation.

E. Remove devices from the site of work when they are not needed for the immediate control of traffic, or for advance notification.

F. Unless otherwise specified, display advance notification VMS messages for a minimum of 7 days prior to start of work.

END OF SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 01892M

RECONSTRUCT CATCH BASIN, CLEANOUT, METER, VALVE, MANHOLE, AND MONUMENT BOXES

PART 2 PRODUCTS

2.1 CONCRETE

Modify Section 2.1 A. by adding the following:

2.1 A.

1. Minimum 1450 psi within 12 hours and 2030 psi within 24 hours.
2. Maximum water cement ratio 0.4.
3. Minimum 740 lb/yd3 of cement.
4. Add accelerators (excluding calcium chloride) or plasticizers as necessary to achieve quick set and strength.
5. Add a minimum of 230 lb/yd3 of steel fiber to increase strength of mix. Poly-fibers may also be included in addition to steel if part of a standard mix design. Steel fiber to be cold drawn with deformed ends 1.2in - 2.4in in length and .02in - .04in in diameter. Minimum steel tensile strength of 120,000 PSI (ASTM 820).

PART 3 EXECUTION

3.1 RAISE BOXES

Modify section 3.1 B by adding the following:

3.1 B.

1. Correctly reference all boxes prior to surfacing.
2. Contact Qwest prior to reconstruction of Qwest manholes. Contact:Jeff Stapley, phone number (801) 974-8150.
3. Reconstruct top section of cleanout box and catch basin using #5 Rebar to be tied to existing reinforcing steel with a minimum 6 in. overlap. The existing steel in the structure must be exposed to allow for the required overlap.
4. Schedule work during non peak traffic hours.

5. Begin adjustment work on only the number of boxes that can be completed in a 24-hour period. (including concrete set to 1450 psi when raising boxes)
6. Notify appropriate utility companies prior to making any adjustments.
7. Contractor shall be responsible for removal of any debris that enters the manhole or catch basin.
8. Cooperate with utility company to allow access to manholes during construction process if necessary.
9. Consolidate concrete using a high frequency internal vibrator.
10. Remove traffic control devices as soon as possible after 1450 psi has been reached or at the direction of the engineer.
11. Use steel plates as needed to comply with traffic control limitations.
12. Lower catch basins/cleanout boxes, manholes and valve boxes before rotomilling and reconstruct top section after paving.

END OF SECTION

January 22, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 02721 M

UNTREATED BASE COURSE (SHOULDER DRESSING)

PART 2 PRODUCTS

2.1 AGGREGATES

Replace Section 2.1 tables 3 and 4 with the following:

Table 3

Aggregate Properties		
Dry Rodded Unit Weight	Not less than 75 lbs/ft^3	AASHTO T 19
Material Passing No.40 Sieve	P. I. 0 to 8	AASHTO T 90
Aggregate Wear	Not to exceed 50 percent.	AASHTO T 96
Dry Weight Values	Within bands shown in Table 4	
Gradation Limits	Table 4	AASHTO T 11 AASHTO T 27

Table 4

Gradation Limits - Single Value Job-Mix Formula			
Sieve Size	**Percent Passing of Total Aggregate (Dry Weight)**		
	1-1/2 inch	1 inch	3/4 inch
1-1/2 inch	100	--	--
1 inch	--	100	--
3/4 inch	81 -91	--	100
½ inch	67 - 77	79 - 91	--
3/8 inch	--	--	78 - 92
No. 4	43 - 53	49 - 61	55 - 67
No. 16	23 - 29	27 - 35	28 - 38
No. 200	6 - 14	7 - 14	7 - 14

Untreated Base Course: Based on fine and coarse aggregate having approximately the same bulk specific gravities.

PART 3 EXECUTION

3.2 INSTALLATION

Delete subsection 3.2 C and replace with the following:

3.2 INSTALLATION

C. Maintain the optimum moisture content ±2 percent at the time of compaction. AASHTO T 180, Method D. Untreated base course for shoulder dressing will be accepted on a basis of visual inspection and will require a minimum of two roller passes. Use a hand vibratory compactor around obstacles. Approval from the engineer in writing will be required for deviation from this subsection.

END SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT # SP-0193(3)1

SECTION 02742S

PROJECT SPECIFIC SURFACING REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Required PG Asphalt or emulsion.

B. Number of gyrations to use for Superpave Mix Design.

PART 2 PRODUCTS

2.1 MIXES

A. Hot Mix Asphalt (HMA): (Refer to bid item for size)

1. PG 64-34 Asphalt.

2. $N_{initial}$ 8 N_{design} 100 N_{final} 160

B. Open-Graded Surface Course:

1. PG 64-34 Asphalt.

C. Chip Seal

1. Type of asphalt emulsion N/A

D. Tack Coat

1. Emulsified Asphalt SS-1H
2. Diluted 1 – 1

PART 3 EXECUTION **Not used.**

END OF SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT # SP-0193(3)1

SECTION 02745S

ASPHALT MATERIAL

Delete Section 02745 in its entirety and replace with the following.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Asphalt materials.

1.2 PAYMENT PROCEDURES

A. Price adjustments for asphaltic cement and liquid asphalt (chip-seal emulsions and/or cut-backs):
   1. Standard department procedures governs price adjustments made where asphalt material does not conform to the specifications
      a. If the price adjustment exceeds 30 percent, the Engineer may order the removal of any or all the defective asphalt material.
      b. The pay factor for such material is 0.50 when allowed to remain in place.

B. Price adjustments for Performance Graded Asphalt Binder (PGAB):
   1. Standard department PGAB management plan governs price reductions or removal of material where they binder does not conform to the specifications.

1.3 REFERENCES

A. AASHTO M 81: Cut-Back Asphalt (Rapid-Curing Type).

B. AASHTO M 82: Cut-Back Asphalt (Medium-Curing Type).

C. AASHTO M 140: Emulsified Asphalt.

D. AASHTO M 208: Cationic Emulsified Asphalt.

E. AASHTO M 226: Viscosity Graded Asphalt Cement.

F. AASHTO MP 1: Performance Graded Asphalt Cement.

G. AASHTO T 44: Solubility of Bituminous Materials.

H. AASHTO T 49: Penetration of Bituminous Materials.

I. AASHTO T 50: Float Test for Bituminous Materials.

J. AASHTO T 51: Ductility of Bituminous Materials.

K. AASHTO T 59: Testing Emulsified Asphalt.

L. AASHTO T 201: Kinematic Viscosity of Asphalts.

M. AASHTO T 228: Specific Gravity of Semi-Solid Bituminous Materials.

N. AASHTO T 240: Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test).

O. AASHTO T 300: Force Ductility of Bituminous Materials.

P. AASHTO T 301: Elastic Recovery Test of Bituminous Materials by Means of a Ductilometer.

Q. ASTM D 92: Flash and Fire Points by Cleveland Open Cup.

R. ASTM D 1190: Concrete Joint Sealer, Hot-Applied Elastic Type.

S. ASTM D 2007: Characteristic Groups in Rubber Extender and Processing Oils and Other Petroleum-Derived Oils by the Clay-Gel Absorption Chromatographic Method.

T. ASTM D 2026: Cutback Asphalt (Slow-Curing Type).

U. ASTM D 3405: Joint Sealants, Hot-Applied, for Concrete and Asphalt Pavements.

V. ASTM D 4402: Viscosity Determinations of Unfilled Asphalts Using the Brookfield Thermosel Apparatus.

W. ASTM D 5167: Melting of Hot-Applied Joint and Crack Sealant and Filler for Evaluation.

X. ASTM D 5329: Sealants and Fillers, Hot-Applied, For Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements.

Y. ASTM D 5801: Toughness and Tenacity of Bituminous Materials.

Z. CA 332: California Test Method for Torsional Recovery of Modified Asphalt Residue.

AA. UDOT Method 967: Cold Bend Flexibility

1.4 SUBMITTALS

A. For each shipment of material, supply a vendor-prepared bill of lading showing the following information:
   1. Type and grade of material
   2. Type and amount of additives, used, if applicable
   3. Destination
   4. Consignee's name
   5. Date of Shipment
   6. Railroad car or truck identification
   7. Project number
   8. Loading temperature
   9. Net weight in tons (or net gallons corrected to 60 degrees F, when requested)
   10. Specific gravity
   11. Bill of lading number
   12. Manufacturer of asphalt material

1.5 DELIVERY, STORAGE, AND HANDLING

A. Each shipment of asphalt material must:
   1. Be uniform in appearance and consistency.
   2. Show no foaming when heated to the specified loading temperature.

B. Do not supply shipments contaminated with other asphalt types or grades than those specified.

1.6 GRADE OF MATERIAL

A. The Engineer determines the grade of material to be used based on the supply source designated by the Contractor when the bid proposal lists more than one grade of asphalt material.

PART 2 PRODUCTS

2.1 PERFORMANCE GRADED ASPHALT BINDER (PGAB)

A. Supply PGABs under the Approved Supplier Certification (ASC) System. Refer to UDOT Asphalt Binder Quality Management Plan.

B. As specified in AASHTO M320, with the following modifications:
   1. Delete superscript (f) for all specified grades having algebraic differences of 92 degrees C or greater between the high and low design temperatures.
   2. Add Direct Tension Test for all specified grades having algebraic differences of 92 degrees C or greater between the high and low design temperatures.
      a. Failure Strain, minimum of 1.5 percent at 1.0 mm/min.
      b. Failure Stress, minimum of 4.0 Mpa
   3. Delete G*/sin delta requirement for the original binder on all specified grades having algebraic differences of 92 degrees C or greater between the high and low design temperatures.
   4. Add G* and phase angle (delta) requirements for the original binder on all specified grades having an algebraic difference of 92 degrees C between the high and low design temperatures.
      a. G* (complex modulus), 1.3 kPa, minimum
      b. Phase angle (delta), 74 degrees, maximum
   5. Add G* and phase angle (delta) requirements for the original binder on all specified grades having an algebraic difference of 98 degrees C or greater between the high and low design temperatures.
      a. G* (complex modulus), 1.3 kPa, minimum
      b. Phase angle (delta), 71 degrees, maximum
   6. Add Toughness and Tenacity Test for all specified grades having algebraic differences of 92 degrees C or greater between the high and low design temperatures.
      a. Meet a minimum of 75 lb-in 50 lb-in respectively for each test specimen.

2.2 ASPHALT CEMENT, HOT-POUR BITUMINOUS CRACK SEALANT, LIQUID ASPHALTS, REJUVENATING AGENTS

A. As specified in AASHTO M 226, Table 2 with the following modifications:
   1. Delete and replace ductility at 77EF(25EC) with ductility at 39.2EF(4EC) with values as detailed below.

AC - 2.5	AC - 5	AC - 10	AC - 20
50+	25+	15+	5+

B. As specified for cationic and anionic emulsified asphalt.
   1. All standard Slow Setting (SS, CSS), Medium Setting (MS, CMS), and Rapid Setting (RS, CRS) grades; inclusive of all High-Float designations (HF).
   2. Supply under the Approved Supplier Certification System (ASC).
   3. Meet AASHTO M 208 and M 140.

C. Conform to the requirements of:
   1. Table 1: Cationic Rapid Setting Emulsified Polymerized Asphalt (CRS-2P); or
   2. Table 2: Latex Modified Cationic Rapid Setting Emulsified Asphalt (LMCRS-2); or
   3. Table 3: Cationic Medium Setting Emulsified Asphalt (CMS-2S); or
   4. Table 4: High Float Medium Setting Emulsified Asphalt (HFMS-2): or
   5. Table 5: High Float Medium Setting Emulsified Polymerized Asphalt (HRMS-2SP); or
   6. Table 6: High Float Rapid Setting Emulsified Polymerized Asphalt (HFRS-2P); or
   7. Table 7: Cationic Rapid Setting Emulsified Asphalt (CRS-2A, B).

D. Curing cut-back asphalt:
   1. As specified for slow curing (SC) in ASTM D 2026.
   2. As specified for medium curing (MC) in AASHTO M 82.
   3. As specified for rapid curing (RC) in AASHTO M 81.

E. Conform to requirements for Emulsified Asphalt Pavement Rejuvenating Agent:
   1. Table 8: Type B
   2. Table 9: Type B Modified
   3. Table 10: Type C
   4. Table 11: Type D

F. Conform to the requirements for Hot-Pour Bituminous Crack Sealant:
   1. Table 12

Table 1

Cationic Rapid Setting Emulsified Polymerized Asphalt (CRS-2P)			
Tests	**AASHTO Test Method**	**Min.**	**Max.**
Emulsion			
Viscosity , SFS, 140EF (60EC), sec (Project-site Acceptance/Rejection Limits)	T59	100	400
Settlement (a) 5 days, percent	T 59		5
Storage Stability Test (b) 1 d, 24 h, percent	T 59		
Demulsibility (c) 35 ml, 0.8% sodium dioctyl Sulfosucinate, percent	T 59	40	
Particle Charge Test	T 59	Positive	
Sieve Test, percent	T 59		0.10
Distillation			
Oil distillate, by vol of emulsion, percent			0
Residue (d), percent		68	
Residue from Distillation Test			
Penetration, 77EF(25EC), 100 g, 5 s, dmm	T 49	80	150
Ductility, 39.2EF(4EC), 5 cm/min, cm Toughness, lb-in Tenacity, lb-in	T 51 ASTM D5801 ASTM D5801	35 75 50	
Solubility in trichloroethylene, percent	T 44	97.5	

(a) The test requirement for settlement may be waived when the emulsified asphalt is used in less than a five-day time; or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days.
(b) The 24-hour (1-day) storage stability test may be used instead of the five-day settlement test.
(c) The demulsibility test is made within 30 days from date of shipment.
(d) Distillation is determined by AASHTO T 59, with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.

Modify the asphalt cement prior to emulsification.

Table 2

Latex Modified Cationic Rapid Setting Emulsified Asphalt (LMCRS-2)			
Tests	**AASHTO Test Method**	**Min.**	**Max.**
Emulsion			
Viscosity, SFS, 122 EF (50 EC), Sec (Project Site Acceptance/Rejection Limits)	T59	75	300
Settlement (a) 5 days, percent	T 59		5
Storage Stability Test (b) 1 d, 24 h, percent	T 59		1
Demulsibility (c) 35 ml, 0.8% sodium dioctyl Sulfosucinate, percent	T 59	40	
Particle Charge Test	T 59	Positive	
Sieve Test, percent	T 59		0.3
Distillation			
Oil distillate, by vol of emulsion, percent			0
Residue (d), percent		65	
Residue from Distillation Test			
Penetration, 77 °F(25 °C), 100 g, 5 s, dmm	T49	40	200
Torsional Recovery, (e)		18	

(a) The test requirement for settlement may be waived when the emulsified asphalt is used in less than a five-day time; or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days.
(b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
(c) Make the demulsibility test within 30 days from date of shipment.
(d) Determine distillation by AASHTO T 59,with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.
(e) CA 332 (California Test Method)

Co-mill latex and asphalt during emulsification

Table 3

Cationic Medium Setting Emulsified Asphalt (CMS-2S)		
Tests	**AASHTO Test Method**	**Specification**
Emulsion		
Viscosity, SSF, 122EF (50EC), sec.	T 59	50 - 450
Percent residue	T 59	60 min
One-day storage stability, percent	T 59	1 max
Sieve, percent	T 59	0.10 max
Particle charge	T 59	Positive
Oil Distillate, percent by volume of emulsion	T 59	5-15
Residue		
Penetration, 77EF (25EC), 100g, 5 sec, dmm	T 59	100-250
Solubility, percent	T 59	97.5 min.

Table 4

High Float Medium Setting Emulsified Asphalt (HFMS-2)			
Tests	**AASHTO Test Method**	**Min.**	**Max.**
Emulsion			
Viscosity, SSF, 122 °F(50 °C), Sec (Project Site Acceptance/Rejection Limits	T59	70	300
Storage Stability Test, 1d, 24 h, percent	T59		1.0
Sieve Test , percent	T59		0.1
Distillation	T59		
Oil Distillate, by vol of emulsion, percent	T59	NA	NA
Residue, percent	T59	65	
Residue from Distillation Test			
Penetration, 77 °F(25 °C), 100g,5 s, dmm	T49	50	200
Float Test, 140 °F(60 °C), sec	T50	1200	
Solubility in Trichloroethylene, percent	T44	97.5	
Ductility, 77 °F(25 °C) 5cm/min, cm	T51	40	

Table 5

High Float Medium Setting Emulsified Polymerized Asphalt (HFMS-2P) (a)			
Tests	**AASHTO Test method**	**Min.**	**Max.**
Emulsion			
Viscosity , SSF ,122EF (50EC), sec (Project Site Acceptance/Rejection Limits)	T 59	100	450
Storage Stability Test (a) 1 d, 24 h, percent	T 59		0.1
Sieve Test, percent	T 59		0.1
Distillation			
Oil distillate, by vol of emulsion, percent	T 59	1	7
Residue (c), percent	T 59	65	
Residue from Distillation Test			
Penetration, 77EF (25EC), 100 g, 5 s, dmm	T 49	70	300
Float Test, 140EF (60EC), sec	T 50	1200	~~300~~
Solubility in trichloroethylene, percent	T 44	97.5	
Elastic Recovery, 77EF (25EC), percent	T 301	50	

(a) Supply an HFMS-2SP (anionic, polymerized, high-float) as an emulsified blend of polymerized asphalt cement, water, and emulsifiers. Polymerize the asphalt cement with a minimum of 3.0% polymer by weight of the asphalt cement prior to emulsification. After standing undisturbed for a minimum of 24 hours, the emulsion shall be smooth and homogeneous throughout with no white, milky separation, pumpable, and suitable for application through a distributor.
(b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
(c) Determine the distillation by AASHTO T 59, with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.

Table 6

High Float Rapid Setting Emulsified Polymerized Asphalt (HFRS-2P) (a)			
Tests	**AASHTO Test method**	**Min.**	**Max.**
Emulsion			
Viscosity, SFS @ 122EF (50EC), sec (Project Site Acceptance/Rejection Limits)	T 59	100	450
Storage Stability Test (a) 1 d, 24 h, percent	T 59		1
Demulsibility (b) 0.02 N Ca Cl_2, percent	T 59	40	
Sieve Test, percent	T 59		0.1
Distillation			
Oil distillate, by vol of emulsion, percent	T 59		3
Residue (c), percent	T 59	65	
Residue from Distillation Test			
Penetration, 77EF (25EC), 100 g, 5 s, dmm	T 49	70	150
Float Test, 140EF (60EC), sec	T 50	1200	
Solubility in trichloroethylene, percent	T 44	97.5	
Elastic Recovery, 77EF (25EC), percent	T 301	58	

(a) Supply an HFMS-2SP (anionic, polymerized, high-float) as an emulsified blend of polymerized asphalt cement, water, and emulsifiers. Polymerize the asphalt cement with a minimum of 3.0% polymer by weight of the asphalt cement prior to emulsification. After standing undisturbed for a minimum of 24 hours, the emulsion shall be smooth and homogeneous throughout with no white, milky separation, pumpable, and suitable for application through a distributor.
(b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
(c) Determine the distillation by AASHTO T 59, with modifications to include a 350 ± 5 EF (177±3EC) maximum temperature to be held for 15 minutes.

Table 7

Cationic Rapid Setting Emulsified Asphalt (CRS-2A,B)			
Tests	**AASHTO Test Method**	**Min**	**Max**
Emulsion			
Viscosity, SSF, 122EF (50EC), sec (Project Site Rejection/Acceptance Limits)	T 59	140	400
Storage stability test, 24 h, percent	T 59		1
Demulsibility, 35 mL 0.8 percent Sodium Dioctyl Sulfosucinate, percent	T 59	40	
Particle charge test	T 59	Positive	
Sieve test, percent	T 59		0.10
Distillation			
Oil distillate, by volume of emulsion, percent	T 59		0
Residue, percent	T 59	65	
Use PG58-22 and PG64-22 as base asphalt cement for CRS-2A, B, respectively. Specification for high temperature performance: original and RTFO G*/sin* within 3 EC of grade.			

Table 8

Emulsified Type B Asphalt Pavement Rejuvenating Agent Concentrate		
Tests	**Test Method**	**Limits**
Viscosity, SSF, 77EF (25EC), sec	AASHTO T 59	25-150
Residue, percent W	AASHTO T 59 (mod) (a)	62 Min.
Sieve Test, percent W	AASHTO T 59	0.10 Max.
5-day Settlement	AASHTO T 59	5.0 Max.
Particle Charge	AASHTO T 59	Positive
Pumping Stability (b)		Pass
Residue from Distillation (a)		
Viscosity @ 140EF(60EC), mm^2/s	AASHTO T 201	2500-7500
Solubility in 1,1,1 Trichloroethylene, percent	AASHTO T 44	98 Min.
Flash Point, COC	ASTM D 92	204 EC, Min.
Asphaltenes, percent W	ASTM D 2007	15 Max.
Saturates, percent W	ASTM D 2007	30 Max.
Aromatics, percent W	ASTM D 2007	25 Min.
Polar Compounds, percent W	ASTM D 2007	25 Min.
(a) Determine the distillation by AASHTO T-59 with modifications to include a 300 ± 5 EF (149±3EC) maximum temperature to be held for 15 minutes. (b) Test pumping stability by pumping 475 ml of Type B diluted 1 part concentrate to 1 part water, at 77EF (25EC) through a 1/4 inch gear pump operating at 1750 rpm for 10 minutes with no significant separation or coagulation in pumped material.		
Type B: an emulsion of lube oil and/or lube oil extract blended with petroleum asphalt.		

Table 9

Emulsified Type B Modified Asphalt Pavement Rejuvenating Agent Concentrate		
Property	**Test Method**	**Limits**
Viscosity, SSF, 77EF (25EC), sec	AASHTO T 59	50-200
Residue by distillation or Evaporation (a), percent W	AASHTO T 59	62 Min.
Sieve Test, percent W	AASHTO T 59	0.20 Max.
5-day Settlement, percent W	AASHTO T 59	5.0 Max.
Particle Charge	AASHTO T 59	Positive
Pumping Stability (b)		Pass
Residue from Distillation (a)		
Viscosity (c) 275EF (135 EC), cP	ASTM D 4402	150 - 300
Penetration, 77EF (25EC), dmm	AASHTO T 49	180 Min.
Solubility in 1,1,1 Trichloroethylene, percent	AASHTO T 44	98 Min.
Flash Point, COC, EF (EC)	AASHTO T 48	400(204) Min.
Asphaltenes, percent W	ASTM D 2007	20-40
Saturates, percent% W	ASTM D 2007	20 Max.
Polar Compounds, percent W	ASTM D 2007	25 Min.
Aromatics, percent W	ASTM D 2007	20 Min.
PC/S Ratio	ASTM D 2007	1.5 Min.
(a) Determine the distillation by AASHTO T-59 with modifications to include a 300±5EF (149 ± 3EC) maximum temperature to be held for 15 minutes. (b) Pumping stability is tested by pumping 475 ml of Type B diluted 1 part concentrate to 1 part water, at 77EF (25 EC) through a 1/4 inch gear pump operating at 1750 rpm for 10 minutes with no significant separation or coagulation in pumped material. (c) Brookfield Thermocel Apparatus-LV model at 6 rpm with a #28 spindle at 2-98 torque.		
As required by the Asphalt Emulsion Quality Management system (Materials Manual Part 8-208), the supplier certifies that the base stock contains a minimum of 15 % by weight of Gilsonite Ore. Use the HCL precipitation method as a qualitative test to detect the presence of Gilsonite.		

Table 10

Emulsified Type C Asphalt Pavement Rejuvenating Agent Concentrate		
Property	**Test Method**	**Limits**
Viscosity, SFS, 77EF (25EC), sec	AASHTO T 59	10-100
Residue (a), percent W (Type C supplied ready to use 1:1 or 2:1.	AASHTO T 59 (a)	30 Min. 1:1 40 Min. 2:1
Sieve Test, percent W (b)		0.10 Max.
5-day Settlement, percent W	AASHTO T 59	5.0 Max.
Particle Charge	AASHTO T 59	Positive
pH (May be used if particle charge test is inconclusive)		2.0 - 7.0
Pumping Stability (c)		Pass
Tests of Residue from Distillation (a)		
Viscosity, 275EF (135EC), mm^2/s	AASHTO T 201	475-1500
Solubility in 1,1,1 Trichloroethylene, percent	AASHTO T 44	97.5 Min.
RTFO mass loss, percent W	AASHTO T 240	2.5 Max.
Specific Gravity	AASHTO T 228	0.98 Min.
Flash Point, COC	AASHTO T 48	232 EC, Min.
Asphaltenes, percent W	ASTM D 2007	25 Min., 45 Max.
Saturates, percent W	ASTM D 2007	10 Max.
Polar Compounds, percent W	ASTM D 2007	30 Min.
Aromatics, percent W	ASTM D 2007	15 Min.
(a) Determine the distillation by AASHTO T-59 with modifications to include a 300± 5EF (149 ± 3EC) maximum temperature to be held for 15 minutes. (b) Test method identical to AASHTO T 59 except that distilled water is used in place of 2 % sodium oleate solution. (c) Test pumping stability by pumping 475 ml of Type diluted 1 part concentrate to 1 part water, at 77EF (25EC) through a 1/4 inch gear pump operating at 1750 rpm for 10 minutes with no significant separation or coagulation in pumped material.		
As required by the Asphalt Emulsion Quality Management system (Materials Manual Part 8-208), the supplier certifies that the base stock contains a minimum of 10 % by weight of Gilsonite ore. Use the HCL precipitation method as a qualitative test to detect the presence of Gilsonite.		

Table 11

Emulsified Type D Asphalt Pavement Rejuvenating Agent Concentrate		
Property	**Test Method**	**Limits**
Viscosity, SFS, 77EF (25EC), sec	AASHTO T 59	30-90
Residue, (a) percent W	AASHTO T 59 (mod) (a)	65
Sieve Test, percent W	AASHTO T 59	0.10 Max.
pH		2.0 - 5.0
Residue from Distillation (c)		
Viscosity, 140EF (60EC), cm^2/s	AASHTO T 201	300-1200
Viscosity, 275EF (135EC), mm^2/s	AASHTO T 201	300 Min.
Modified Torsional Recovery (b)	CA 332 (Mod)	40 % Min.
Toughness, 77EF (25EC), in-lb	ASTM D 5801	8 Min.
Tenacity, 77EF (25EC), in-lb	ASTM D 5801	5.3 Min.
Asphaltenes, percent W	ASTM D 2007	16 Max.
Saturates, percent W	ASTM D 2007	20 Max.

(a) California test method #331 for recovery of residue.
(b) Torsional recovery measurement to include first 30 seconds.
(c) Determine the distillation by AASHTO T-59 with modifications to include a 300±5EF (149 ± 3EC) maximum temperature to be held for 15 minutes.

2.3 HOT-POUR CRACK SEALANT FOR BITUMINOUS CONCRETE

A. Combine a homogenous blend of materials to produce a sealant meeting properties and tests in Table 12

B. Packaging and Marking: Supply sealant pre-blended, pre-reacted, and pre-packaged in lined boxes weighing no more than 30 lb.
   1. Use a dissolvable lining that will completely melt and become part of the sealant upon subsequent re-melting.
   2. Deliver the sealant in the manufacturer's original sealed container. Clearly mark each container with the manufacturer's name, trade name of sealant, batch or lot number, and recommended safe heating and application temperatures.

Table 12

Hot-Pour Bituminous Concrete Crack Sealant			
Application Properties:			
Workability:	Pour readily and penetrate 0.25 in and wider cracks for the entire application temperature range recommended by the manufacturer.		
Curing:	No tracking caused by normal traffic after 45 minutes from application.		
Asphalt Compatibility: ASTM D 5329, Sec 14.	No failure in adhesion. No formation of an oily ooze at the interface between the sealant and the bituminous concrete or softening or other harmful effects on the bituminous concrete.		
Material Handling:	Follow the manufacturer's safe heating and application temperatures.		
Test Method	**Property**	**Minimum**	**Maximum**
AASHTO T51	Ductility, modified, 1cm/min, 39.2EF (4EC), cm	30	
UDOT method 967	Cold Temperature Flexibility	no cracks	
AASHTO T 300 (a)	Force-Ductility, lb force		4
ASTM D 5329	Flow 140EF (60EC), 5 hrs 75 E angle, mm		3
ASTM D 3405 (b)	Tensile-Adhesion, modified	300%	
AASHTO T 228	Specific Gravity, 60EF(15.6EC)		1.140
ASTM D 5329	Cone Penetration, 77EF(25EC), 150 g, 5 sec., dmm		90
ASTM D 5329	Resilience, 77EF(25EC), 20 sec., percent	30	
ASTM D 4402	Viscosity, 380EF(193.3EC), SC4-27 spindle, 20 rpm, cP		2500
ASTM D 5329	Bond as per ASTM D 1190, Section 6.4		Pass

(a) Maximum of 4 lb force during the specified elongation of 30 cm @ 1 cm/min, 39.2EF (4 EC).
(b) Use ASTM D 3405, Section 6.4.1. Delete bond and substitute tensile-adhesion test in accordance to D 5329.

PART 3 EXECUTION Not used.

END OF SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT # SP-0193(3)1

SECTION 02768M

PAVEMENT MARKING MATERIALS

(Warranty Specification)

PART 3 EXECUTION

3.1 PREPARATION

Modify Section 3.1. by adding the following:

B. Reference and reestablish the original highway pavement markings configuration. Any surveying required to reference existing markings will be completed at the Contractors expense. Provide a Spreadsheet or Plan Sheets showing existing line configurations and pavement marking locations with control points shown as in 3.1 C. below and provide to the Engineer for review prior to the placement of the OGS.

C. Line Control.

1. Establish control points at 100 ft intervals on tangent and at 50 ft intervals on curves.
2. Maintain the line within 2 inches of the established control points and mark the roadway between control points as needed.
   a. Remove marking tape that is not placed within tolerance of the established control points and replace at no expense to the Department.

3.2 APPLICATION

B. Add stop bars at all side streets and on main line where applicable.

END OF SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT # SP-0193(3)1

SECTION 02771M

CURBS, GUTTERS, DRIVEWAYS, PEDESTRIAN ACCESS RAMPS, AND PLOWABLE END SECTIONS

Add the following to Part 2, Products:

2.5 DETECTABLE WARNINGS

A. Detectable Warning Surface – In-line truncated dome pattern that meets the requirements of Standard Drawing GW 5. Provide a color that contrasts visually with the adjoining surfaces (either light-on-dark, or dark-on-light). Acceptable products for installation are as follows:

1. Polymer Composite Panel – Vitrified Polymer Composite (VPC), homogenous integral color (UV stable), skid resistant, non-glare finished panel. Use cast-in-place panel for new construction, and surface applied panel for retrofit construction.

2. Precast Concrete Panel – High strength concrete with high tensile stainless steel tendons, homogeneous integral color (UV stable), skid resistant panel. Use for new construction, or retrofit construction.

Delete Paragraph E from Article 3.3, FINISHING CONCRETE.

Add the following to Part 3, Execution:

3.6 DETECTABLE WARNING SURFACE

A. Polymer Composite Panel Installation:

1. Install cast-in-place detectable warning panels directly into the finished plastic concrete surface in accordance with manufacturer recommendations. Provide a smooth transition between the panel and the surrounding concrete surface.

2. Install surface applied detectable warning panels directly on roughened existing concrete surface. Apply manufacture supplied adhesive in accordance

with manufacturers recommendations. Use mechanical fasteners to secure the panel to the existing surface. Caulk a smooth transition bead along beveled panel edge and surrounding concrete surface.

B. Precast Concrete Panel Installation:

1. Place as shown on drawings. Install per manufacturer recommendations for cast-in-place or thin set method. Provide a smooth transition between the panel and the surrounding concrete surface.

END OF SECTION

March 9, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 02772 S

SURFACE COURSES - POTHOLE PATCHING

PART 1 GENERAL

1.1 SECTION INCLUDES

1. Item to patch potholes or unstable pavement. Potholes previously patched with temporary winter patch material must also be excavated and re-patched.

1.2 RELATED SECTIONS

1. Section 02741: Hot Mix Asphalt
2. Section 02748: Prime Coat/Tack Coat.

PART 2 EXECUTION

1. Excavate and patch potholes and areas with unstable pavement prior to placement of OGSC.
2. Large areas may be excavated with rotomill. Small areas with backhoe or hand tools. Edges must be sawed or cut square.
3. The Contractor will be required to excavate 6-inch depth, tack, patch with Hot Mix Asphalt to match existing surface and compact.
4. Specific material requirements determined by the Engineer.

END SECTION

March 22, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 02892 M

TRAFFIC SIGNAL

Delete the following sections: 2.2 to 2.6, 2.9 to 2.14, 3.2, 3.5, and 3.7 to 3.10

Add the following to paragraph 1.1, Section Includes:

C. Materials and procedures for installing cable to convert to video detection.
D. This specification only applies if loops are damaged during rotomilling. If damage occurs intersection detection will be converted to video detection.

Modify Section 3.1 by adding the following subsection.

G. Notify Dale Lake, Region 1 Signal Maintenance Supervisor at least 48 hours prior to milling in signalized intersections – phone number (801) 791-0270.
H. If detector loop is damaged by rotomilling cut loop immediately.

Delete line A of paragraph 3.6, Install Detector Loops, and replace with the following:

A. Install state furnished cable into existing conduits and mast arms to allow for converting intersection detection to video detection.

March 9, 2004

SPECIAL PROVISION

PROJECT #SP-0193(3)1

SECTION 02961 M

ROTOMILLING

Add the following to section 3.1

F. Locate and lower manholes, water valves, etc, before rotomilling.
G. Determine location of all utilities or hazards prior to rotomilling. Damage to utilities or contractor's equipment shall be at contractor's expense.

Modify Section 3 by adding the following subsection.

3.3 Exposure of Traffic to Rotomilled Surfaces.

A. Incidental to rotomilling and as directed by the Engineer, construct smooth transitions from the rotomilled surface to existing or newly paved surfaces.

1. Build transitions using a stable asphalt mix or with a mill in stable existing pavement.
2. Create transverse transitions with a length at least 150 times the difference in elevation between the rotomilled and existing or newly paved surfaces.
3. Create longitudinal transitions with a width at least 20 times the difference in elevation between the rotomilled and existing or newly paved surfaces.
4. Prior to paving the rotomilled surface, remove all transitions using a rotomill or other equipment approved by the engineer.
5. Appropriately sign and protect transitions in accordance with Section 01554.
6. Saw cut transitions and remove excess material before paving.

B. Do not expose traffic to longitudinal elevation breaks in or between adjacent travel lanes open to traffic.
C. Remove loose material from the surface prior to allowing traffic access.
D. Place temporary stripping as directed by the Engineer.